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Cambridge - Building Ordinance - 1907

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PROPOSED DRAFT OF A BUILDING ORDINANCE FOR THE CITY OF CAMBRIDGE, MASSACHUSETTS

This is not the final draft which will be submitted to the City Government. It follows in general arrangement and scope the Boston Building Law passed this year by the Legislature. Criticisms and suggestions are asked for from citizens by the Commission.

C. H. BLACKALL, *Chairman*
ERNEST W. CLARK, *Secretary*
MILLARD FILLMORE
HERMAN BIRD
JOHN H. CORCORAN
Building Law Commission

CAMBRIDGE, September 4, 1907

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ADMINISTRATION.

1 SECTION 1. There shall be in the city of Cambridge
2 a department, to be called the Building Department,
3 which shall be under the charge of the Superintendent
4 of Public Buildings, hereinafter designated as the Super-
5 intendent. The Superintendent, who shall have had at
6 least five years' experience as an architect or a builder,
7 shall be appointed by the mayor. He shall receive such
8 salary as shall be fixed by the Board of Aldermen, with
9 the approval of the mayor. He shall have the sole
10 charge of the construction, inspection, repair, alteration,
11 care and custody of all the public buildings and school-
12 houses of the city not constructed for or by any other
13 special department, and shall supervise and direct the
14 construction of buildings of other departments whenever
15 so requested by any such department.

16 The present officers and employees of the Building
17 Department, except the Board of Appeal, shall hold
18 their several offices and positions until removed or dis-
19 charged according to law.

20 The Superintendent may, under civil service rules,
21 with the approval of the mayor, appoint such number of
22 inspectors, employees and assistants as the mayor shall,
23 from time to time, determine. No person shall be
24 appointed as inspector of construction who has not had
25 at least five years' experience as a builder, architect, or
26 as a superintendent or foreman or competent mechanic in
27 charge of building construction.

28 The Superintendent may appoint as his deputy an
29 inspector in the department who shall, during the absence
30 or disability of the Superintendent, exercise all the pow-
31 ers of the Superintendent. No officer connected with
32 the department shall engage in any other business or be
33 interested in the doing of work or the furnishing of
34 material for the construction, repair or maintenance of

35 any building, or in the making of plans or of specifica-
36 tions therefor, unless he is the owner of the building or
37 a member of the Board of Appeal.

38 The clerk of the department shall, under the direc-
39 tion of the Superintendent, keep a record of the business
40 of the department, and the Superintendent shall submit
41 to the mayor a yearly report of such business. The
42 records of the department shall be open to public inspec-
43 tion. The Superintendent may require plans and speci-
44 fications of any proposed structure or for the alteration
45 of any structure or building to be filed with him, dupli-
46 cates of which, when approved by the Superintendent,
47 shall be kept at the building during the progress of the
48 work. Such duplicate shall be open to the inspection of
49 any inspector in said department.

50 The Superintendent shall grant permits for the con-
51 struction, alteration, removal or tearing down of build-
52 ings or structures, and for plumbing and setting and
53 maintenance of steam boilers and furnaces when appli-
54 cation for the same are made and filed in conformity
55 with law.

56 All permits issued by the Superintendent shall be on
57 printed forms approved by him.

58 If the Superintendent finds that the terms of a per-
59 mit are being violated, he may, after notice mailed to
60 the person to whom the permit was issued, order the
61 whole or any part of the work which is being done under
62 the permit to be stopped, and such work shall not be
63 resumed until the terms of the permit have been com-
64 plied with, to the satisfaction of the Superintendent.

65 All applications for permits under the provisions of
66 this act shall be in writing, on forms furnished by the
67 department. The Superintendent may require the mate-
68 rial facts set forth in the same to be verified by the oath
69 of the applicant; he may also require, in his discretion,
70 a survey of a lot on which any proposed building is to
71 be erected to be filed with the application. Every appli-
72 cation shall state the name and address of the owner.

1 SECTION 2. The Superintendent, or one of his
2 inspectors, shall examine as often as is practicable every
3 building in the course of construction or alteration, and
4 shall make record of all violations of this act and of all
5 other matters relative thereto. The publication of such
6 records, with the consent of the Superintendent, shall be
7 privileged.

1 SECTION 3. The Superintendent, or one of his
2 inspectors, shall examine any building reported as dan-
3 gerous or damaged, and shall make a record of such
4 examination, stating the nature and estimated amount
5 of the damage, and the purpose for which the building
6 was used, and in case of fire the probable origin thereof;
7 and shall examine all buildings in respect to which appli-
8 cations have been made for permits to raise, enlarge,
9 alter or repair, and shall make a record of every such
10 examination.

1 SECTION 4. The Superintendent or one of his in-
2 spectors shall inspect every building or other structure
3 or anything attached to or connected therewith which he
4 has reason to believe to be unsafe or dangerous to life,
5 limb, or adjoining buildings, and if he finds it unsafe
6 or dangerous, he shall forthwith in writing notify the
7 owner, agent or any person having an interest therein
8 to secure the same, and shall affix in a conspicuous place
9 upon its external walls a notice of its dangerous condi-
10 tion. Said notice shall not be removed or defaced with-
11 out his consent.

12 The Superintendent may, with the written approval
13 of the mayor, order any building which in his opinion
14 is unsafe to be vacated forthwith.

1 SECTION 5. The person notified as provided in the
2 preceding section shall secure or remove said building,
3 structure, attachment or connection forthwith. If the
4 public safety so requires, the Superintendent, with the

5 approval of the mayor, may at once enter the building
6 or other structure, the land on which it stands or the
7 abutting land or building, with such assistance as he may
8 require, and secure the same, and may erect such protec-
9 tion for the public by proper fence or otherwise, as may
10 be necessary, and for this purpose may close a public
11 highway.

Board of Appeal.

1 SECTION 6. There shall be in the city of Cambridge
2 a board, to be called the Board of Appeal from the
3 inspector of buildings, which board shall consist of three
4 members, including always one architect and one master
5 builder, to be appointed as follows:

6 One person, who shall be appointed by the mayor,
7 who shall hold his office for three years from the date
8 of his appointment; one architect, who shall be appointed
9 by the mayor, and who shall hold his office for two years
10 from the date of his appointment; one master builder,
11 who shall be appointed by the mayor, and who shall hold
12 his office for one year from the date of his appointment.

13 The terms of the several members of said board shall
14 be three years each, after the expiration of the first term.

15 Any member of said board may be removed by the
16 mayor for malefeasance, incapacity or neglect of duty.

17 No member of said board shall sit on a case in which
18 he is interested, and in case of such disqualification, or
19 of the necessary absence of any member, the other two
20 members shall appoint a substitute. If two or more
21 members are so disqualified or absent, the inspector of
22 public buildings shall appoint one substitute, the appel-
23 lant another, and the two so appointed shall, if neces-
24 sary, appoint a third.

25 Each member of said board shall be paid ten dollars
26 per day for actual service. The reasonable expenses of
27 said board, including clerical assistance and office expenses
28 if required, shall be paid by the city of Cambridge.

29 Every decision of said board shall be in writing and
30 shall require the assent of two members.

1 SECTION 7. An applicant for a permit whose appli-
2 cation has been refused may appeal therefrom within
3 ninety days. A person may appeal from any decision
4 of the Superintendent within ten days after being notified
5 of such decision, by giving to the Superintendent notice
6 in writing of his appeal. Said notice or a certified copy
7 thereof shall be at once transmitted by the Superintendent
8 to the Board of Appeal. After notice given to such
9 parties as the board shall order, a hearing shall be had,
10 and said board shall affirm, annul or modify said refusal
11 or order. The board may vary the provisions of this
12 ordinance in specific cases which appear to them not to
13 have been contemplated by this act, although covered by
14 it, or in cases where manifest injustice is done, provided
15 the decisions of said board in such a case shall be unan-
16 imous and shall not conflict with the spirit of any pro-
17 visions of this act.

18 The decision shall specify the variations allowed and
19 the reasons therefor, and shall be filed in the office of
20 the Superintendent within ten days after the hearing. A
21 certified copy shall be sent by mail or otherwise to the
22 applicant, and a copy kept publicly posted in the office
23 of the Superintendent for two weeks thereafter. If the
24 order or refusal of the Superintendent is affirmed, such
25 order or refusal shall have full force and effect. If said
26 order or refusal is modified or annulled, the Superinten-
27 dent shall issue a permit in accordance with said decision.
28 The provisions of this section shall also apply to any
29 similar action or order of the city electrician.

1 SECTION 8. Methods of construction or mainte-
2 nance equally substantial to those required by the provis-
3 ions of this act may be allowed with the written consent
4 of the Superintendent and the Board of Appeal specify-
5 ing the same. A record of the method allowed shall be
6 kept in his office.

7 It shall be the duty of the Board of Appeal to sub-
8 mit to the mayor on or before the 1st of December of

9 each year a report giving a summary of all decisions of
10 the board, together with such recommendations for revis-
11 ion of the law as may to them seem advisable.

12 Any requirement necessary for the strength or stabil-
13 ity of any proposed structure or the safety of the occu-
14 pants thereof not specifically covered by this act shall be
15 determined by the Superintendent, subject to appeal.

1 SECTION 9. The fire limits of the city of Cam-
2 bridge, as they now exist, shall continue until changed
3 by ordinance, and the City Council may by ordinance
4 from time to time extend and define said fire limits and
5 establish other limits in any part of said city within which
6 every building built after the establishment thereof shall
7 be of the first or second class. This restriction shall not
8 apply to wharves, nor to buildings not exceeding twenty-
9 seven feet in height on wharves, nor to market sheds or
10 market buildings not exceeding such height, nor to build-
11 ings for the storage of coal, wood or grain, if the exter-
12 nal parts of said buildings, elevators and structures are
13 covered with slate, tile, metal or other equally fireproof
14 material, and the mode of construction and the location
15 thereof are approved by the Superintendent. Tempo-
16 rary structures to facilitate the prosecution of any author-
17 ized work may be erected under such conditions as the
18 Superintendent may prescribe.

1 SECTION 10. The provisions of this act shall not
2 apply to bridges, quays or wharves, nor to buildings on
3 land ceded to the United States or owned and occupied
4 by the Commonwealth, nor to the Middlesex County
5 court house, jail, house of correction, nor to railroad
6 stations, nor to portable school buildings erected and
7 maintained by the Schoolhouse Department, nor to vot-
8 ing booths.

9 Except as otherwise provided by law, the provisions
10 of this act shall not be held to deprive any board or
11 department of the city of Cambridge of any power or

12 authority which they have at the date of the passage of
13 this act, or of the remedies for the enforcement of the
14 orders of said boards or officers; unless said powers,
15 authorities or remedies are inconsistent with the provis-
16 ions of this act; nor to repeal any existing law or ordi-
17 nance not herein expressly repealed, except so far as it
18 may be inconsistent with the provisions of this act.

DEFINITIONS.

1 SECTION 11. In this act the following terms shall
2 have the meanings respectively assigned to them:

3 First-class building: A first-class building shall con-
4 sist of fireproof material throughout, with floors con-
5 structed of iron, steel or reinforced concrete beams, filled
6 in between with terra-cotta or other masonry arches or
7 with concrete or reinforced concrete slabs; wood may be
8 used only for under and upper floors, windows and door
9 frames, sashes, doors, interior finish, hand rails for stairs,
10 necessary sleepers bedded in the cement, and for isolated
11 furrings bedded in mortar. There shall be no air space
12 between the top of any floor arches and the floor.
13 boarding.

14 Second-class building: All buildings not of the first
15 class, the external and party walls of which are of brick,
16 stone, iron, steel, concrete, reinforced concrete, concrete
17 blocks, or other equally substantial and fireproof material.

18 Third-class building: A wooden frame building.

19 Composite building: A building, partly of second-
20 class and partly of third-class construction.

21 Foundation: That part of a wall below the level
22 of the street curb, or, if a wall is not on a street, that
23 part of the wall below the level of the highest ground
24 next to the wall, or, if so construed by the Superintendent,
25 that part of a party or partition wall below the cellar
26 floor.

27 Height of a building: The vertical distance of the
28 highest point of the roof above the mean grade of the
29 curbs of all the streets upon which it abuts, and if it

30 does not abut on a street, above the mean grade of the
31 ground adjoining the building.

32 Party wall: A wall that separates two or more build-
33 ings and is used or adapted for the use of more than one
34 building.

35 Partition wall: An interior wall of masonry in a
36 building.

37 Thickness of wall: The minimum thickness of such
38 wall.

39 Story of a building: That part of a building between
40 the top of any floor beams and the top of the floor or
41 roof beams next above.

42 Basement: That story of a building not more than
43 forty per cent of which is below the grade of the street.

44 Cellar: That story of a building more than forty
45 per cent of which is below the grade of the street, and
46 in third-class buildings that part of the building which
47 is below the sills.

REQUIREMENTS FOR ALL BUILDINGS.

1 SECTION 12. No building, structure or foundation
2 shall be constructed or altered without a permit, and
3 such work shall be done in accordance with drawings
4 bearing the approval of the Superintendent.

5 Every structure in process of construction, alteration,
6 repair or removal, and every neighboring structure or
7 portion thereof affected by such process or by any exca-
8 vation, shall be supported during such process satisfac-
9 torily to the Superintendent.

10 The Superintendent may take such measures as the
11 public safety requires to carry these provisions into
12 effect.

13 All buildings shall have leaders sufficient to discharge
14 the roof water in such a manner as not to flow upon any
15 public way or any neighboring property. Such leaders
16 may project into a public way not over seven inches.

17 Every chimney flue shall extend at least four feet
18 above the highest point of contact with the roof.

19 Every permanent building more than twenty feet
20 high having a flat roof shall have permanent means of
21 access to the roof from the inside by an opening not
22 less than two feet by three feet, with a fixed step-ladder.

23 Every building shall have, with reference to its
24 height, condition, construction, surroundings, character
25 of occupation and number of occupants, reasonable means
26 of egress in case of fire, satisfactory to the Superinten-
27 dent, except that in all factories or workshops hereafter
28 built or altered, of second-class construction, where ten
29 or more persons are employed above the third floor, one
30 exit shall consist of a fireproof stairway enclosed in
31 incombustible material.

32 Water pipes in every building shall be properly
33 protected from frost.

34 All chimneys of masonry construction shall have
35 walls at least eight inches thick, or be constructed of
36 four-inch brick walls with a suitable flue lining.

37 Every building where persons are employed shall
38 have at least one water-closet for every twenty persons
39 therein employed, and in any building where both sexes
40 are employed, separate accommodations shall be fur-
41 nished for men and women. Every enclosure containing
42 one or more water-closets shall be provided with venti-
43 lation satisfactory to the Superintendent.

44 In every first-class building and in every second-class
45 building within the fire district all of the outside finish
46 shall be of incombustible material, except window and
47 door frames, and except finish about show windows.
48 Where store fronts are carried up more than one story
49 the columns and lintels shall be of, or finished with,
50 incombustible material; but in no case shall store fronts
51 be carried more than two stories unless said fronts are
52 constructed and finished throughout with fireproof mate-
53 rial, except window and door frames.

54 Every ventilating flue shall be constructed of, or
55 lined with, incombustible material.

56 Every floor in second-class buildings shall have its
57 beams tied to the walls and to each other with wrought-

58 iron straps or anchors at least three-eighths of an inch
59 thick by one and one-half inches wide, and not less than
60 eighteen inches long, so as to form continuous ties across
61 the building not more than ten feet apart. Walls run-
62 ning parallel or nearly parallel with floor beams shall
63 be properly tied once in ten feet to the floor beams by
64 iron straps or anchors of the size above specified.

65 Every wooden header or trimmer more than four
66 feet long carrying a floor load of over seventy pounds
67 per square foot shall, at connections with other beams,
68 be framed or hung in stirrup irons, and joint-bolted. All
69 tail beams and similar beams of wood shall be framed
70 or hung in stirrup irons.

PROHIBITIONS.

1 SECTION 13. No alteration or repair of a wooden
2 building within the fire limits shall be made without a
3 permit from the Superintendent, and no permit to in-
4 crease the height or ground area of such a building shall
5 be granted, nor shall a permit for alterations or repairs
6 be granted if the estimated cost of the proposed altera-
7 tions or repairs exceeds one-half of the cost of a like
8 new building.

9 No wooden building, within or without the fire lim-
10 its, shall be moved to any position within the fire limits.

11 No recess or chase shall be made in any external or
12 party wall so as to leave the thickness at the back less
13 than eight inches.

14 No roof or floor timber entering a party wall shall
15 have less than four inches of solid brickwork between it
16 and the end of any other timber.

17 No part of any roof shall be constructed in such a
18 manner as to discharge snow, ice or other material upon
19 a public street or alley.

20 No elevated staging or stand for observation pur-
21 poses shall be constructed or occupied upon the roof of
22 any building.

23 No chimney shall be corbelled from a wall more than
24 the thickness of the wall.

25 No chimney shall be hung from a wall which is less
26 than twelve inches thick.

27 No masonry shall rest upon wood, except piles and
28 mud sills.

29 No part of any floor timber shall be within two
30 inches of any chimney.

31 No studding or furring shall be within one inch of
32 any chimney.

33 No furnace or boiler for heating shall be placed upon
34 a wooden floor.

35 No smoke pipe shall project through any external
36 wall or window.

37 No steam, furnace or other hot-air pipes shall be
38 carried within one inch of any woodwork, unless such
39 pipes are double or otherwise protected by incombustible
40 material.

41 No observation stand shall be constructed or main-
42 tained except in accordance with plans approved by the
43 Superintendent.

44 No closet of any kind shall be constructed under any
45 staircase leading from the cellar or basement to the first
46 story.

47 No boiler shall be placed or maintained under any
48 public way.

49 No part of any structure, except cornices, permanent
50 awnings, string courses, window caps and sills, and out-
51 side means of egress as otherwise provided, shall project
52 over any public way or square. No cornice shall so
53 project more than three feet, nor more than twelve inches
54 over a way of a width of thirty feet or less.

55 No building shall be erected for or converted to use
56 as a stable unless such use is authorized by the Board of
57 Health.

MATERIALS.

Strength of Materials.

1 SECTION 14. The stresses in materials hereafter
2 used in the construction of all buildings, produced by

3 their own weight and the loads herein specified, shall not
 4 exceed the limits assigned in the following paragraphs
 5 of this section:

(a) TIMBER.

UNIT STRESSES IN POUNDS PER SQUARE INCH.

	On Extreme Fibre of Beams.	Shearing along the Grain.	Compression Perpendicular to the Grain.
White pine and spruce . . .	1,000	80	250
White oak	1,000	150	600
Yellow pine (long leaved) . . .	1,500	100	500

6 Stresses due to transverse loads combined with direct
 7 tension or compression shall not exceed the extreme fibre
 8 stresses given above.

9 In computing deflection the modulus of elasticity shall
 10 be taken as follows:

	Pounds per Square Inch.
White pine	750,000
Spruce	900,000
Yellow pine (long leaved)	1,300,000
White oak	850,000

Columns (Centrally Loaded).

11 For wooden columns with flat ends, where L is the
 12 length of the column, D is its least diameter, the average
 13 stress per square inch on a cross-section shall be limited
 14 as follows:

$\frac{L}{D}$	AVERAGE STRESS PER SQUARE INCH.		
	White Pine and Spruce.	Long-leaved Yellow Pine.	White Oak.
0 to 10	630	900	810
10 to 15	595	850	765
15 to 20	560	800	720
20 to 25	525	750	675
25 to 30	490	700	630

- 15 No column shall be used with a greater unsupported
 16 length than thirty times its least diameter.
 17 For excentric loads, see Section 16.

(b) WROUGHT IRON AND STEEL.

UNIT STRESSES IN POUNDS PER SQUARE INCH.

	Wrought Iron.	Steel (1).
Extreme fibre of rolled beams or shapes	12,000	16,000
Tension	12,000	16,000
Compression in flanges of built beams	12,000	16,000
Shearing (see below for bolts)	8,000	10,000
Direct bearing, including pins and rivets	15,000	18,000
Bending on pins	18,000	22,500
Modulus of elasticity	27,000,000	29,000,000

(1) These stresses (except for rivets) are for steel having an ultimate tensile strength of from fifty-five thousand to sixty-five thousand pounds per square inch, an elastic limit of not less than one-half the ultimate strength, and a minimum percentage of elongation in eight inches of one million four hundred thousand, divided by the ultimate strength.

- 18 For compression members twelve thousand for iron
 19 and sixteen thousand for steel, reduced according to the
 20 following formula :

$$\frac{12,000 \text{ (or } 16,000 \text{ for steel).}}{1 + \frac{1}{20,000} \frac{L^2}{r^2}}$$

in which L is the length of the column in inches, and r is the radius of gyration in inches taken around the axis about which the column will bend (for free columns, the least radius of gyration).

- 21 The stresses due to transverse loads combined with
 22 direct tension or compression shall not exceed the extreme
 23 fibre stress given above for rolled beams and shapes, or
 24 in case of built members the above tension and compres-
 25 sion stresses (see Section 16).
 26 Compression flanges of beams shall be proportioned
 27 to resist lateral flexure unless properly stayed or secured
 28 against it. If the ratio of unsupported length of flange
 29 to width of flange does not exceed twenty, no allowance
 30 need be made for lateral flexure. If the ratio is seventy
 31 the allowable stress on the extreme fibre shall be one-half
 32 of that above specified, and proportionally for interme-
 33 diate ratios.

34 Shearing and bearing stresses on bolts shall not be
 35 higher than eighty per cent of those allowed by the above
 36 table. All connections in skeleton buildings, all splices in
 37 steel trusses and girders, and all connections of such
 38 trusses and girders to the sides of steel columns shall, if
 39 possible, be made by means of rivets rather than by bolts.

(c) CAST IRON.

UNIT STRESSES IN POUNDS PER SQUARE INCH.

Extreme fibre stress, tension	3,000
Extreme fibre stress, compression	16,000

40 Cast iron shall not be used for columns in buildings
 41 of more than seventy-five feet in height, nor in cases
 42 where the value of the length divided by least radius of
 43 gyration exceeds seventy.

CAST-IRON COLUMNS (CENTRALLY LOADED AND UNSUPPORTED Laterally).

Where the Length divided by the Least Radius of Gyration equals—	Average Stress per Square Inch of Section.	Where the Length divided by the Least Radius of Gyration equals—	Average Stress per Square Inch of section.
10	11,000	50	9,800
20	10,700	60	9,500
30	10,400	70	9,200
40	10,100		

(d) STONE WORK IN COMPRESSION.

STRESSES IN TONS OF TWO THOUSAND POUNDS PER SQUARE FOOT.

44 First quality dressed beds and builds, laid solid in
 45 mortar of one part Portland cement to three parts sand,
 46 or one part natural cement to two parts sand.

Granite	60
Marble and limestone	40
Sandstone	30

47 In cases where poorer mortar is used, to avoid stain
 48 from cement, stresses shall be less than above, and must
 49 be approved by the Superintendent.

(e) BRICKWORK IN COMPRESSION.

STRESSES IN TONS OF TWO THOUSAND POUNDS PER SQUARE
 FOOT.

50 1. For first-class work of hard-burned bricks, includ-
 51 ing piers in which the height does not exceed six times
 52 the least dimension, laid in:

(a) One part Portland cement, three parts sand, by volume, dry	20
(b) One part natural cement, two parts sand, by volume, dry	18
(c) One part natural cement, one part lime and six parts sand, by volume, dry	12
(d) Lime mortar, one part lime, six parts sand, by volume, dry	8

53 2. For brick piers of hard-burned bricks, in which
 54 the height is from six to twelve times the least dimension:

Mortar (a)	18
Mortar (b)	15
Mortar (c)	10
Mortar (d)	7

55 3. For brickwork made of "light-hard" bricks, the
 56 stresses shall not exceed two-thirds of the stresses for like
 57 work of hard-burned bricks.

(f) CONCRETE.

58 When the structural use of concrete is proposed, a
 59 specification stating the quality and proportions of mate-
 60 rials, and the methods of mixing the same, shall be sub-
 61 mitted to the Superintendent, who may issue a permit at
 62 his discretion and under such further conditions, in addi-
 63 tion to those stated below, as he sees fit to impose.

64 (A) In first-class Portland cement concrete, contain-
 65 ing one part cement to not more than six parts mixed
 66 properly graded aggregate, except in piers or columns of
 67 which the height exceeds six times the least dimension,
 68 the compressive stress shall not exceed thirty tons of two
 69 thousand pounds per square foot.

70 (B) In piers and columns of first-class Portland
71 cement concrete, containing one part cement to not more
72 than five parts mixed properly graded aggregate, where
73 the height of the pier or column is more than six times
74 and does not exceed twelve times its least dimension, the
75 compressive stress shall not exceed twenty-five tons of
76 two thousand pounds per square foot.

77 By "aggregate" shall be understood all the materials
78 in the concrete except the cement. Cinders concrete shall
79 be used constructively only for floors, roofs and for
80 filling.

81 Rules for the computation of reinforced concrete col-
82 umns may be formulated from time to time by the Super-
83 intendent, with the approval of the Board of Appeal.

84 In reinforced concrete beams or slabs subjected to
85 bending stresses, the entire tensile stress shall be assumed
86 to be carried by the steel, which shall not be stressed
87 above the limits allowed for this material. First-class
88 Portland cement concrete in such beams or slabs, con-
89 taining one part cement to not more than five parts
90 mixed properly graded aggregate, may be stressed in
91 compression to not more than five hundred pounds per
92 square inch. In case a richer concrete is used, this stress
93 may be increased with the approval of the Superinten-
94 dent to not more than six hundred pounds per square
95 inch.

96 In reinforced concrete the maximum shearing force
97 upon the concrete when uncombined with compression
98 upon the same plane shall not exceed sixty pounds per
99 square inch, unless the Superintendent, with the consent
100 of the Board of Appeal, shall fix some other value.

101 If the imbedded steel has no mechanical bond with
102 the concrete, its holding power shall not exceed the
103 allowable shearing strength of the concrete.

(g) IN GENERAL.

104 Under the prescribed loads beams shall be so pro-
105 portioned that the deflection shall not exceed one-three-
106 hundred-and-sixtieth (1/360) of the span.

107 Stresses for materials and forms of material not
108 herein mentioned shall be determined by the Superin-
109 tendent. Provision for wind bracing shall be made
110 wherever it is necessary, and all buildings shall be
111 constructed of sufficient strength to bear with safety
112 the load intended to be placed thereon, in addition to
113 the weight of the materials used in construction.

114 No cutting for piping or any other purpose shall
115 be done which would reduce the strength of any part
116 of the structure below what is required by the provis-
117 ions of this act.

Quality of Materials.

1 SECTION 15. All materials shall be of such quality
2 for the purposes for which they are to be used as to
3 insure, in the judgment of the Superintendent, ample
4 safety and security to life, limb and neighboring prop-
5 erty. The Superintendent shall have power to reject all
6 materials which in his opinion are unsuitable, and may
7 require tests to be made by the owner to determine the
8 strength of the structural materials, and may require
9 certified copies of results of tests made elsewhere from
10 the architect, engineer, builder, owner or other interested
11 persons.

12 Hollow cast-iron columns, if used, shall be shown by
13 measurements and tests satisfactory to the Superintendent
14 to be of practically uniform thickness and free from blow
15 holes.

Mortars.

16 All mortars shall be made with such proportion of
17 sand as will insure a proper degree of cohesion and
18 tenacity and secure thorough adhesion to the material
19 with which they are used, and the Superintendent shall
20 condemn all mortars not so made.

21 (a) Mortar below the level of water shall be no
22 poorer than one part Portland cement and three parts
23 sand;

24 (b) Mortar for first-class buildings shall, for the
25 lower half of their height, be no poorer than one part
26 natural cement to two parts sand; and, for the upper
27 half, no poorer than one part of natural cement, one-
28 half part of lime, and three parts of sand;

29 (c) Mortar for second-class buildings and for such
30 parts of third-class buildings as are below the level of
31 the sidewalk shall be no poorer than one part of natural
32 cement, one of lime, and four of sand;

33 (d) Mortar for third-class buildings above ground
34 shall be no poorer than one part lime and four parts
35 sand.

36 The Superintendent may allow lime mortar in set-
37 ting stone where cement will stain.

Concrete.

38 Concrete shall be used immediately after mixing; it
39 shall not be placed in the work after it has begun to
40 harden, and it shall be deposited in such manner and
41 under such regulations as to secure a compact mass of
42 the best quality for the proportions used. Forms shall
43 remain until the concrete has hardened so as to be able
44 to carry its load safely, and shall be removed without
45 jar.

46 The Superintendent may require an applicant for a
47 permit for the structural use of concrete to have an
48 inspector satisfactory to the Superintendent at all times
49 on the work while concrete is being mixed or deposited,
50 and such inspector shall make daily reports to the Super-
51 intendent on the progress of the work.

Cement.

52 Cement shall conform to the specifications of the
53 American Association for Testing Materials, as modi-
54 fied from time to time by that association.

Reinforced Concrete.

55 Reinforced concrete slabs, beams or girders, if ren-
56 dered continuous over supports by being unbroken in

57 section, shall be provided with proper metal reinforce-
58 ment at the top over said supports and may be com-
59 puted as continuous beams, as hereinafter described.

60 The modulus of elasticity of the concrete, if not
61 shown by direct tests, may for beams and slabs be taken
62 as one-fifteenth that of steel, and for columns one-tenth
63 that of steel.

64 The reinforcing metal shall be covered by not less
65 than three-fourths inch of concrete in slabs, and by not
66 less than one and one-half inches of concrete in beams
67 and columns.

Methods of Computation.

1 SECTION 16. Beams or girders of metal or rein-
2 forced concrete shall be considered as simply supported
3 at their ends, except when they extend with unbroken
4 cross-section over the supports, in which case they may
5 be considered as continuous.

6 The span of a beam shall be considered as the
7 distance from centre to centre of the bed plates or sur-
8 faces upon which it rests. If it is fastened to the side
9 of a column, the span shall be measured to the centre
10 of the column.

11 In slabs, beams or girders continuous over supports,
12 provision shall be made for a negative bending moment
13 at such supports equal to four-fifths of the positive bend-
14 ing moment that would exist at the centre of the span
15 if the piece were simply supported; and the positive
16 bending moment at the centre of the span may be taken
17 equal to the negative bending moment at the support.

18 In the case of a slab of reinforced concrete with
19 parallel ribs or girders beneath, the rib or girder may
20 be considered to include a portion of the slab between
21 the ribs, forming a T-beam. The width of the T-beam
22 on top shall not exceed one-third the span of the rib nor
23 the distance from centre to centre of the ribs.

24 Reinforced concrete columns shall be proportioned
25 on the assumption that the concrete and the steel are

26 shortened in length in the same proportion. The steel
27 members shall be tied together at intervals sufficiently
28 short to prevent buckling.

29 If a column is loaded excentrically or transversely,
30 the maximum fibre stress, taking account of the direct
31 compression, the bending which it causes, its excentricity
32 and the transverse load, shall not exceed the maximum
33 allowable stress in compression.

34 If a tension piece is loaded excentrically or trans-
35 versely, the maximum fibre stress, taking account of the
36 direct tension, its excentricity and the transverse load,
37 shall not exceed the maximum allowable stress in tension.

38 An excentric load upon a column shall be considered
39 to affect excentrically only the length of column extending
40 to the next point below at which the column is held
41 securely in the direction of the excentricity.

42 If a piece is exposed to tension and compression at
43 different times, it shall be proportioned to resist the
44 maximum of each kind, but the unit stresses shall be
45 less than those used for stress of one kind, depending
46 upon the ratio and the relative frequency of the two
47 maxima.

48 Net sections shall be used in proportioning steel ten-
49 sion members, and in deducting rivet holes they shall be
50 taken as one-eighth of an inch greater in diameter than
51 the rivets.

52 The length of a steel compression member between
53 supports in any direction shall not exceed one hundred
54 and twenty times its radius of gyration about an axis
55 perpendicular to that direction.

56 The webs of plate girders shall be proportioned to
57 resist buckling in cases where they are not supported
58 laterally, according to the formula:

$$1 + \frac{16000}{3000 \frac{d^2}{t^2}}$$

59 in which t = thickness of web in inches; d = clear,
60 unsupported dimension horizontally or vertically, which-
61 ever is the lesser.

62 In proportioning the flanges of plate girders, one-
63 eighth of the gross area of the web may be considered
64 as available in each flange. If the length of the top
65 flange unsupported laterally exceeds twenty times its
66 width, the allowable stress shall be reduced, as in the
67 case of rolled beams.

68 Pins shall be computed by assuming the forces in the
69 bars to act at the centre of the bearing areas.

70 In riveted trusses the centre of gravity lines of mem-
71 bers coming together at a joint shall, if possible, inter-
72 sect at a point. Excentricity due to a nonfulfillment of
73 this rule shall be allowed for in the computations. The
74 centre of gravity of the rivets connecting one piece to
75 another shall, in general, lie as nearly as practicable in
76 the centre of gravity line of the piece.

CLASSIFICATION.

FIRST AND SECOND CLASS BUILDINGS.

1 SECTION 17. Every building over seventy-five feet
2 in height hereafter erected or raised shall be constructed
3 as a first-class building.

RESTRICTION OF AREAS.

4 Any first-class building hereafter erected to be used
5 above the first floor as a warehouse or store for the stor-
6 age or sale of merchandise shall have all vertical open-
7 ings protected by fireproof enclosures, with incombustible
8 sash, doors and frames. Such enclosures shall, if enclos-
9 ing stairs or escalators, have automatic doors, and all
10 glass in said enclosures shall be wire glass.

11 Second-class buildings used above the first floor as
12 warehouses or stores for the storage or sale of merchan-
13 dise shall be so divided by brick walls built like party
14 walls with the same openings allowed, that no space
15 inside such buildings shall exceed in area ten thousand

16 square feet, and no existing wall in any second-class
17 building shall be removed so as to leave an area of
18 more than ten thousand square feet, nor shall any exist-
19 ing wall, separating areas which combined would exceed
20 ten thousand square feet in area, have openings cut in
21 it greater in area or number than is allowed by this act
22 for party walls.

23 Every second-class building more than three stories
24 high and used above the first floor as a warehouse or
25 store for the storage or sale of merchandise shall have
26 all vertical openings for elevators and stairways, air or
27 light shafts, through its floors protected by fireproof
28 enclosures. Such enclosures shall be supported on fire-
29 proof supports and framing, and shall, if enclosing
30 stairs or escalators, have automatic doors, and all glass
31 in said enclosures shall be wire glass.

32 No building used above the first floor for the storage
33 or sale of merchandise shall have less than two means
34 of egress from every story, one of which means may be
35 either an outside fire escape or through a brick wall
36 closed by automatic doors into a building of the same
37 class; except that an independent monumental stairway
38 extending from the basement to the second floor may be
39 constructed.

BUILDINGS FOR MANUFACTURING PURPOSES.

40 Buildings outside the fire limits and adapted exclu-
41 sively for manufacturing, storage, exhibition, mechanical
42 or stable purposes, may be built under such conditions
43 as the Superintendent shall prescribe. If of wood such
44 buildings shall not exceed forty-five feet in height.

CONSTRUCTION.

Height.

1 SECTION 18. No building, structure or part thereof
2 shall be of a height exceeding two and one-half times
3 the width of the widest street on which the building or

4 structure stands, whether such street is a public street
5 or place or a private way, nor exceeding one hundred
6 and twenty-five feet in any case. The width of such
7 street, place or private way shall be measured from the
8 face of the building or structure to the line of the street
9 on the other side. If the street is of uneven width, the
10 width shall be the average width of the part of the street
11 opposite the building or structure; if the effective width
12 of the street is increased by an area or setback, the space
13 between the face of the main building and the lawfully
14 established line of the street may be built upon to the
15 height of two and one-half times the width of the street.
16 Except that the limitation of the height of buildings
17 shall not apply to churches, steeples, towers, domes,
18 cupolas, belfries, statuary, pipes, water tanks, elevator
19 houses, gas holders, coal or grain elevators, balustrades
20 or parapets, skylights, ventilators, houses not exceeding
21 twelve feet square and twelve feet in height, or other
22 ornamental or similar constructions such as are usually
23 erected above the roof line of buildings, any of which
24 may be carried to a greater height than one hundred and
25 twenty-five feet.

Excavations.

1 SECTION 19. All excavations shall so be protected,
2 by sheet piling if necessary, by the persons causing the
3 same to be made, that the adjoining soil shall not cave
4 in by reason of its own weight. It shall be the duty
5 of the owner of every building to furnish, or cause to
6 be furnished, such support that his building shall not
7 be endangered by any excavation; *provided*, that the
8 owner of any building which is endangered by an exca-
9 vation carried by an adjoining owner more than ten feet
10 below the grade of the street may recover the expense
11 so caused of supporting such building from the person
12 causing such excavation to be made. All permanent
13 excavations shall be protected by retaining walls. In
14 case of any failure to comply with the provisions of this
15 section, the Superintendent may enter upon the premises

16 and may furnish such support as the circumstances may
17 require. Any expense so incurred may be recovered by
18 the city from the person required by law to furnish the
19 support.

Piling.

1 SECTION 20. All buildings shall, if the Superinten-
2 dent determines that piling is necessary, be constructed
3 on foundation piles which, if of wood, shall be not
4 more than three feet apart on centres in the direction
5 of the wall, and the number, diameter and bearing of
6 such piles shall be sufficient to support the superstruc-
7 ture proposed. The Superintendent shall determine the
8 grade at which the piles shall be cut. He may require
9 any applicant for a permit to ascertain by boring the
10 nature of the ground on which it is proposed to build,
11 and he may require an inspector satisfactory to him
12 to be at all times on the work while piles are being
13 driven, who shall keep an accurate record of the length
14 of each pile, the weight and fall of the hammer, and
15 the penetration of each pile for each of the last two
16 blows of the hammer.

17 Plain concrete piles shall be made in place by
18 methods which are reasonably certain to secure perfect,
19 full-sized piles. Reinforced concrete piles, if properly
20 designed to resist the shock of driving, and if driven
21 with a cushion to lessen the shock, or by a water jet,
22 may be molded, allowed to harden, and then driven in
23 place.

24 In case concrete piles are used, whether reinforced
25 or not, their bearing power shall be determined by
26 putting in one or more test piles and loading them
27 after the concrete has hardened. The load allowed
28 shall not be more than one-half of the load under
29 which the pile begins to settle. In no case, however,
30 shall the load on a concrete pile exceed that specified
31 herein for concrete in columns. Concrete for piles shall
32 have not more than five parts of properly made and

33 mixed aggregate to one part of Portland cement; and
34 the aggregate shall all be capable of passing through a
35 one-inch ring.

36 All wood piles shall be capped with block granite
37 levelers, each leveler having a firm bearing on the pile
38 or piles which it covers, or with first-class Portland
39 cement concrete, not less than sixteen inches thick, above
40 the pile caps, containing one part of cement to not more
41 than six parts of properly graded aggregate of stone
42 and sand, the concrete to be filled in around the pile
43 heads upon the intervening earth.

Foundations of First and Second Class Buildings.

1 SECTION 21. Foundations of first and second class
2 buildings may be of brick, stone or concrete. The thick-
3 ness shall be as stated in Section 23. Foundations of
4 rubble stone shall be allowed only under buildings less
5 than forty-five feet in height and for a depth of less
6 than ten feet.

7 The walls and piers of every building shall have a
8 foundation, the bearing of which shall be not less than
9 four feet below any adjoining surface exposed to the
10 frost, and such foundation, with the superstructure which
11 it supports, shall not overload the material on which it
12 rests.

Cellars.

1 SECTION 22. The cellar of every building, where
2 the grade or nature of the ground so requires, shall be
3 sufficiently protected from water and damp by a bed at
4 least two inches thick over the whole, of concrete, cement
5 and gravel, tar and gravel, or asphalt, or by bricks laid
6 in cement. No cellar or basement floor of any building
7 shall be constructed below the grade of twelve feet
8 above mean low water, unless such cellar is made water-
9 proof to the satisfaction of the Superintendent. All
10 metal foundations and all constructional metal work

11 underground shall be protected from dampness by con-
12 crete, or by other material approved by the Superinten-
13 dent.

Thickness of Walls.

1 SECTION 23. The external walls above the founda-
2 tion of houses for habitation of first or second class con-
3 struction, and not exceeding sixteen hundred square feet
4 in area and not over three stories high, shall be not
5 less than eight inches thick for external walls and not
6 less than twelve inches thick for party walls.

7 Except as above stated, the external and party walls
8 of every building of the first or second class shall be
9 twelve inches thick in the upper two stories not exceed-
10 ing twenty-five feet in height. In the section of two
11 stories, but not exceeding twenty-five feet next below,
12 the walls shall be sixteen inches thick. In the next
13 lower section of three stories, but not exceeding thirty-
14 seven feet, the walls shall be twenty inches thick, and
15 in each succeeding section of three stories, but not ex-
16 ceeding thirty-seven feet or any part thereof, the walls
17 shall be four inches thicker than the section next above
18 it. The foundation walls shall be at least four inches
19 thicker than the required thickness of the walls of the
20 first story. The thickness herein given shall apply to
21 all masonry walls unless they are reinforced by a frame
22 or skeleton of steel.

23 In reckoning the thickness of walls, ashlar shall not
24 be included unless the walls are at least sixteen inches
25 thick and the ashlar is at least eight inches thick, or
26 unless alternate courses are at least four and eight
27 inches to allow bonding with the backing. Ashlar shall
28 be properly held by metal clamps to the backing or
29 properly bonded to the same.

Anchors.

1 SECTION 24. All walls of a first or second class
2 building meeting at an angle shall be securely bonded,
3 or shall be united every five feet of their height by

4 anchors made of at least two inches by half an inch of
5 steel or wrought iron, well painted, and securely built
6 into the side or partition walls not less than thirty-six
7 inches, and into the front and rear walls at least one-
8 half the thickness of such walls.

Brickwork — Bonding.

1 SECTION 25. Every eighth course, at least, of a
2 brick wall shall be a full heading or bonding course,
3 except where walls are faced with face brick, in which
4 case in every eighth course at least every other brick
5 shall be a full header. No diagonal header ties shall
6 be used.

Vaulted Walls.

1 SECTION 26. If the air spaces are headed over and
2 the walls are built solid for at least three courses below
3 the floor and roof beams, walls, if of brick, may be built
4 hollow. They shall contain, exclusive of withes, the
5 same amount of material as is required for solid walls,
6 and the masonry on the inside of the air space in walls
7 over two stories in height shall be not less than eight
8 inches thick and the parts on either side shall be securely
9 tied together with ties not more than two feet apart in
10 each direction.

Walls Framed with Iron or Steel.

1 SECTION 27. Walls may be built in part of iron
2 or steel or with a reinforced concrete or metal frame-
3 work. In such metal framework the beams and girders
4 shall be riveted to each other at their respective junction
5 points. If columns made of rolled iron or steel are used,
6 their different parts shall be riveted to each other, and
7 the beams and girders resting upon them shall, if pos-
8 sible, have riveted connections to unite them with the
9 columns. If cast-iron columns are used, each successive
10 column shall be bolted to the one below it by at least

11 four bolts not less than three-fourths of an inch in diam-
12 eter, and the beams and girders shall be bolted to the
13 columns. At each line of floor or roof beams, lateral
14 connections between the ends of the beams and girders
15 shall be made in such manner as rigidly to connect the
16 beams and girders with each other in the direction of
17 their length.

18 All party walls of skeleton construction shall have
19 curtain walls of brick, not less than twelve inches thick.

20 All outside walls of skeleton construction shall have
21 curtain walls which may be of masonry, terra-cotta, con-
22 crete, or reinforced concrete, constructed and supported
23 under such conditions as the Superintendent shall pre-
24 scribe.

25 If the metal or other framework is so designed that
26 the enclosing walls do not carry the weight of floors
27 or roof, then the walls shall be of masonry or concrete
28 construction and shall be thoroughly anchored to the iron
29 skeleton, and whenever the weight of such walls rests
30 upon beams or columns, such beams or columns shall be
31 made strong enough in each story to carry the weight
32 of wall resting upon them without reliance upon the walls
33 below them.

Party Walls above Roof.

1 SECTION 28. In buildings less than forty-five feet
2 in height all party walls shall be built to a height at
3 least twelve inches above the roof covering, and shall
4 be capped with stone, cement or metal securely fastened
5 to the masonry. In all other buildings such walls shall
6 be carried thirty inches above the roof.

Walls — Cornices.

1 SECTION 29. Where a wall is finished with a stone
2 cornice, the greatest weight of material of such cornice
3 shall be on the inside of the face of the wall. All cor-
4 nices of second-class buildings within the fire limits shall

5 be of brick or covered with fireproof material, and the
6 walls shall be carried up to the boarding of the roof;
7 and where the cornice projects above the roof the
8 masonry shall be carried up to the top of the cornice
9 and covered with metal, like parapet walls.

Piers and Hearths.

1 SECTION 30. Piers and walls shall have caps or
2 plates of iron or stone where they are needed, sufficient
3 properly to distribute the load.

4 Hearths shall be supported by trimmer arches of
5 brick or stone; or shall be of single stones at least six
6 inches thick, built into the chimney and supported by iron
7 beams, one end of which shall be securely built into the
8 masonry of a chimney or of an adjoining wall, or which
9 shall otherwise rest upon an incombustible support.
10 Rough brick jambs of every fireplace, range or grate
11 opening shall each be at least eight inches wide, and the
12 backs of such openings shall be at least eight inches thick.
13 Hearths and trimmer arches shall be at least twelve
14 inches longer on either side than the width of such open-
15 ings, and at least eighteen inches wide in front of the
16 chimney breast. Brickwork over fireplaces and grate
17 openings shall be supported by proper iron bars, or brick
18 or stone arches.

Walls — Doorways in Party Walls.

1 SECTION 31. Openings for doorways in party walls
2 shall not exceed one hundred square feet each in area,
3 and each opening shall have two sets of fire doors sepa-
4 rated by the thickness of the wall, hung in a manner
5 satisfactory to the Superintendent, except that the aggre-
6 gate width of all openings in any story shall not exceed
7 fifty per cent of the length of the wall in which such
8 openings occur. Openings, not exceeding one hundred
9 and forty-four square inches, constructed and protected
10 as shall be approved by a writing signed by the Super-
11 intendent, may be permitted in any wall or floor.

Fire Protection.

1 SECTION 32. All structural metal supporting or
2 forming part of the frame, floors, roof or columns of
3 any building, except as otherwise exempted in this act,
4 shall be protected against the effect of heat.

5 This protection shall consist of concrete, or of porous
6 terra-cotta or brick set in cement mortar. When block
7 construction is used, it shall be clamped in place with
8 steel clamps, or wrapped securely with number twelve
9 galvanized-iron wire or metal lathing in such manner as
10 to hold each block in place, and shall be plastered with
11 lime or other mortar at least three-fourths of an inch
12 thick in addition to the protection.

13 The protection on all floor and roof beams shall be
14 at least one inch thick, on all floor and roof girders and
15 on all beams carrying masonry at least one inch thick on
16 top and two inches thick elsewhere, on all columns carry-
17 ing only floors three inches, and on all columns built into
18 or carrying walls four inches.

19 If terra-cotta blocks are used for protection, such
20 blocks may be hollow, but each face shall be solid, and
21 no flange shall be less than one inch thick.

22 Plaster on wire or metal lath shall not be considered
23 as a fire protection for steel or iron structural members,
24 but may be used with an air space under arches as a sus-
25 pended ceiling, provided that such arches have at least
26 one inch of thickness of fireproofing under the flanges in
27 addition to such ceiling, and that the metal lath and
28 plaster are suspended separately from the arches and are
29 not less than one inch below the same.

30 All protection shall be applied directly to the metal
31 work and shall not be broken into nor interrupted by any
32 pipes, wires, chases or conduits of any kind.

33 About isolated columns on the exterior of buildings,
34 the thickness of protection may be reduced to one inch,
35 when the same is covered with an outer shell of cast iron
36 or steel.

37 When a column or girder is formed of built up
38 shapes, the spaces between flanges shall be filled solid
39 with protecting material, but this protection need not
40 extend more than one inch beyond the edges of project-
41 ing angles, bars or channels. The protection shall cover
42 all lugs, brackets, braces, etc.

43 The metal work of all trusses carrying masonry or
44 floor loads shall be protected, as hereinbefore described,
45 but said provisions shall not apply to trusses which carry
46 roof load only.

47 When a wall or partition is formed with a frame-
48 work of angles, channels, or other built-up shapes, and
49 such wall or partition is filled in flush with both faces of
50 the frame with terra-cotta blocks, additional protection
51 may be omitted.

52 The above requirements as to fire-proofing shall not
53 apply to iron or steel in second or third class buildings in
54 any case in which the use of wood without fire protection
55 would be permissible under this act.

56 In work in connection with alterations of existing
57 buildings, the character and amount of protection for
58 steel and ironwork shall be made satisfactory to the Su-
59 perintendent.

60 In positions where the protection of isolated or ex-
61 posed columns is likely to be broken or damaged there
62 shall be outside of the protection a casing at least five
63 feet high of iron or wood, bound with wire or steel so as
64 to be self-supporting.

65 Spaces between and behind all studding and furring
66 shall be filled solid with bricks and mortar or other fire-
67 proof material for a space of five inches in height above
68 the floor beams or plaster grounds. Spaces between the
69 strap furring on brick walls shall be filled solid with mor-
70 tar for five inches below the bottom of the floor beams.
71 The spaces between stringers of stairs and joists of land-
72 ings, unless unceiled or of fireproof construction, shall be
73 stopped solid with brick, terra-cotta or other incombust-
74 ible material as often as twice in each flight of stairs.

75 The spaces between floor beams on bearing partitions
76 shall be stopped in a similar manner.

77 In every building of second or third class construc-
78 tion each floor shall be thoroughly stopped by a continu-
79 ous layer of asbestos fabric, magnesio calcite or other fire-
80 resisting material approved by the Superintendent.

81 The tops of all heating furnaces and smoke pipes
82 shall be at least one foot below the nearest wooden beams
83 or ceiling. All ceilings immediately over a furnace or
84 boiler and for six feet on each side thereof, and all ceil-
85 ings over indirect radiators shall, except under fireproof
86 floors, be metal lathed and plastered.

87 All hot-air register boxes in the floors or partitions of
88 buildings shall be set in soapstone or equally fireproof
89 borders not less than two inches in width, shall be made
90 of tin plate, and shall have double pipes and boxes prop-
91 erly fitted to the soapstone. Hot-air pipes and register
92 boxes shall be at least one inch from any woodwork, and
93 their connecting pipes shall be two inches from any wood-
94 work. If indirect hot water or indirect steam heat is used,
95 the Superintendent may modify or dispense with the fore-
96 going requirements.

Fireproof Partitions.

1 SECTION '33. Partitions in buildings of first class
2 construction shall be constructed of plastering applied to
3 metal lathing, or to plaster boards, or to hollow blocks
4 composed of cement, plaster or terra-cotta. When block
5 construction is used it shall be self-supporting above all
6 openings, thoroughly bonded and set in Portland ce-
7 ment. The blocks shall start from the floor and shall
8 be continuous to the floor above, except that in the upper
9 story, where there is a space between the ceiling of the
10 top story and the roof, these partitions need not extend
11 above the ceiling. If plastered on both sides the blocks
12 shall be not less than four inches thick up to a height of
13 fifteen feet, and shall be increased one inch for every ad-

14 ditional eight feet or fraction thereof. The thickness of
15 webs shall be not less than three-fourths of an inch.
16 If partitions are not plastered on both sides, the
17 thickness of blocks shall be one inch greater than as spe-
18 cified above.

Timbers in Walls of Second Class Buildings.

1 SECTION 34. The ends of all wooden floor or roof
2 beams in second class buildings shall enter the wall to a
3 depth of at least four inches. When the wall is eight
4 inches thick it shall be corbelled or the beams shall be
5 hung in metal hangers; and the ends of all such beams
6 shall so be shaped or arranged that in case of fire they
7 may fall without injury to the wall.

Alteration of Existing Buildings.

1 SECTION 35. Any building, except those of third
2 class construction within the fire limits, may be altered,
3 remodeled or enlarged for use as a house for habita-
4 tion.

5 The first story or basement, or both the first story
6 and basement, in such buildings may be used for mercan-
7 tile purposes, provided that the walls and ceilings sur-
8 rounding the area so used shall be fire-stopped to the sat-
9 isfaction of the Superintendent.

10 The height of any such building shall not be in-
11 creased unless the walls and foundations conform to the
12 provisions of this act.

13 Every such building, more than thirty-three feet in
14 height, so altered, remodeled or enlarged, shall be pro-
15 vided with at least two independent exits satisfactory to
16 the Superintendent.

17 Every such building, so altered, remodeled or en-
18 larged, shall have, in addition to the exposure on the
19 widest street, an exposure as long as the average width
20 of the building, upon a space open from the ground to
21 the sky, at least ten feet wide for the first three stories,

22 and increasing in width five feet for the next two stories.
23 If the proposed building is more than five stories in
24 height, said space shall be twenty feet in the upper
25 stories: *provided*, that if the basement and first story are
26 adapted or enlarged for use for mercantile purposes, the
27 exposure required by this section shall not apply to that
28 part of the building, and *provided, also*, that sufficient
29 space be retained on the lot for the storage of ashes and
30 garbage.

31 Such exposure may be either upon private or public
32 ways, or upon land which is dedicated for the use of the
33 building, and may be divided and placed as approved by
34 the Superintendent.

35 These spaces shall remain undiminished so long as
36 the building is used for habitation.

37 If the building is situate on the corner of streets or
38 private ways not less than ten feet wide the Superintend-
39 ent may approve the omission of the whole or part of
40 this additional exposure.

41 If in the opinion of the Superintendent, the altera-
42 tion proposed to be made in a building is of such extent
43 as, when done, to produce a practically new structure or
44 to impair the stability or increase the fire risk of the struc-
45 ture as a whole, then the whole structure shall be made
46 to conform to the provisions of this act for a new struc-
47 ture of the same class. A building damaged by fire or
48 other casualty may be repaired or restored so as to con-
49 form to its original condition, or may be reconstructed
50 in some or all of its parts, so as to conform to the re-
51 quirements of this act for new buildings, as the Superin-
52 tendent may specify in his permit.

53 Every living room in a building adapted for habita-
54 tion shall have a window on the open air of an area not
55 less than ten square feet and distant in a three story
56 building not less than six feet from any opposite wall;
57 distant in a four story building not less than eight feet
58 from any opposite wall; distant in a five story building
59 not less than ten feet from any opposite wall. This shall

60 not apply to the construction of third class buildings, ex-
61 cept the provision for a window on the open air of an
62 area.

63 The exposure required under this section shall apply
64 to all buildings hereafter constructed adapted for habita-
65 tion, except as is otherwise provided for tenement houses.

66 Within the fire limits, buildings of third-class con-
67 struction may be altered or remodeled, provided there
68 is no increase thereby in the fire risk.

Floors — Loads.

1 SECTION 36. All new or renewed floors and stairs
2 shall be so constructed as to carry safely the weight to
3 which the proposed use of the building may subject
4 them, and every permit granted shall state for what
5 purpose the building is designed to be used; but the
6 least capacity per superficial square foot, exclusive of
7 materials, shall be:

8 For floors of houses for habitation, fifty pounds.

9 For office floors and for public rooms of hotels, one
10 hundred pounds.

11 For floors of retail stores and public buildings, ex-
12 cept schoolhouses, or for light manufacturing, one hun-
13 dred and twenty-five pounds.

14 For floors of schoolhouses, other than floors of as-
15 sembly rooms, eighty pounds, and for floors of assembly
16 rooms, one hundred and twenty-five pounds.

17 For floors of drill rooms and riding schools, two
18 hundred pounds.

19 For floors of warehouses, at least two hundred and
20 fifty pounds.

21 For flat roofs, forty pounds.

22 For stairs, landings, platforms and fire escapes,
23 seventy pounds.

24 The loads not included in this classification shall be
25 determined by the Superintendent.

26 The full floor load specified in this section shall be
27 included in proportioning all parts of buildings designed

28 for warehouses, or for heavy mercantile and manufac-
29 turing purposes. In other buildings, however, reductions
30 may be allowed, as follows: for girders carrying more
31 than one hundred square feet of floor, the live load may
32 be reduced ten per cent. For columns, piers, walls and
33 other parts carrying two floors, a reduction of fifteen per
34 cent of the total live load may be made; where three
35 floors are carried, the total live load may be reduced by
36 twenty per cent; four floors, twenty-five per cent; five
37 floors, thirty per cent; six floors, thirty-five per cent;
38 seven floors, forty per cent; eight floors, forty-five per
39 cent; nine or more floors, fifty per cent.

40 The Superintendent may prescribe the maximum
41 loads which may be imposed upon the floors of existing
42 buildings.

Shutters.

1 SECTION 37. In all first or second class mercantile
2 or manufacturing buildings over thirty feet in height,
3 outside openings in party walls, or in any rear or side
4 wall within twenty feet of an opposite wall or building,
5 shall have metal frames and sashes, and shall be glazed
6 with wire glass, or shall be protected by shutters. Such
7 shutters shall be covered on both sides with tin, or shall
8 be made of other substantial fireproof material, and hung
9 on the outside, either upon independent metal frames or
10 upon metal hinges attached to the masonry, and shall be
11 made to be handled from the outside, and one such shut-
12 ter in each room shall have a protected hand-hole eight
13 inches in diameter.

Elevators.

1 SECTION 38. Elevators and hoists for freight which
2 do not run above the first story may be constructed with-
3 out fireproof enclosures. Freight and passenger eleva-
4 tors may be placed in areas or hallways where the same
5 are continuous and unbroken, such elevators to be pro-
6 tected by metal grille. In all buildings more than three

7 stories in height, except as above provided, all shafts
8 for elevators, hoists and lifts shall be constructed of
9 fireproof material. All light and ventilating shafts, air
10 ducts and dumb waiters more than twenty-eight inches
11 square, extending above one story, shall be constructed
12 of or lined with incombustible material in a manner
13 approved by the Superintendent. The tops of all such
14 shafts shall be covered with incombustible material
15 unless the shaft extends above the upper floor of the
16 building, and in that case the shaft shall be carried at
17 least three feet above the roof and shall be covered with
18 a skylight. Such shafts, if for freight or for passenger
19 elevators, shall be of brick at least eight inches thick,
20 or of metal covered on both sides with at least one
21 inch of plaster applied immediately to the metal, or
22 with some other equally substantial fireproof material.

23 Every opening into a shaft or hoistway shall be
24 protected by self-closing gates, rails, trap-doors, or
25 other equivalent devices.

26 Every elevator shall be provided with a safety at-
27 tachment to prevent the falling of the car. The ma-
28 chinery over the elevator shall have underneath it a
29 grille sufficient to protect the car from falling material.

30 Every opening into an elevator shaft or hoistway
31 and every opening through a floor, other than a stair-
32 way, shall be closed when not in use.

33 All elevator shaft openings, other than openings
34 into passenger elevator shafts, shall be furnished with
35 metal-covered or incombustible doors, hung in a manner
36 satisfactory to the Superintendent, and shall be pro-
37 vided with iron thresholds. Wire glass panels may be
38 used in such doors. Outside windows or openings of
39 every elevator shaft shall have three vertical iron rods,
40 painted red, equally spaced off in such window or open-
41 ing.

42 The space between the car of a passenger elevator
43 and door of each landing shall be not more than two
44 inches.

45 No elevator shall be used in any building until the
46 same is approved in writing by the Superintendent.

47 In case any freight or passenger elevator is not
48 constructed or furnished in compliance with this act,
49 or has become unsafe, the Superintendent shall post a
50 conspicuous warning and prohibition at each entrance
51 to such elevator. It shall thereafter, until a new writ-
52 ten permit is given by the Superintendent, be a penal
53 offence hereunder to operate the said elevator, or to
54 remove or deface the said notice.

55 Freight elevator wells hereafter built on the line
56 of the external wall of a building shall be so con-
57 structed that there shall be no recess in the outer wall
58 along the whole line of the same, and that no more
59 than two inches space shall be allowed between the plat-
60 form of the car and the outer wall. The side of the
61 platform and the line of the doorway shall be flush
62 with the well-way, and the door openings from the said
63 elevator well into the building shall be placed back
64 from the face of the well, so as to allow space enough
65 for self-closing gates to operate between the door and
66 the well opening. Outside openings to freight eleva-
67 tors shall be protected by self-closing slatted gates,
68 "vertical" with spaces not wider than two inches be-
69 tween the slats.

70 If any accident shall occur to any elevator affecting
71 life or limb or damaging any part of the machinery or
72 running parts of the elevator, it shall be the duty of
73 the person in charge, immediately, before any repairs
74 are made, or any broken pieces are removed, to notify
75 the Superintendent of the accident, before the elevator
76 is operated again, so that the cause of the accident may
77 be determined, any faulty construction remedied, and
78 satisfactory repairs made.

79 All manufacturers of elevators shall be required to
80 test, in the presence of an inspector, the safety devices
81 of every elevator installed before the same is turned
82 over to the owners for use, and the Superintendent

83 shall be notified by the manufacturer at least twenty-
84 four hours before such test is made. An inspector
85 may require a test of the safety device of any elevator
86 if in his judgment the same is required.

87 The Superintendent may require additional safe-
88 guards on elevators, if in his judgment the condition,
89 use or surroundings of the elevator demand them.

90 The Superintendent shall inspect all freight and
91 passenger elevators twice each year, and no elevator
92 shall be operated more than six months without a per-
93 mit from the Superintendent.

Wooden Buildings.

1 SECTION 39. Every wooden building hereafter
2 erected shall have a foundation of concrete, rubble, block
3 granite or brick, laid in mortar or other equally substan-
4 tial material, carried to the surface of the ground.
5 Every such foundation, if of brick or concrete, shall be
6 at least twelve inches thick; if of granite, shall be at
7 least sixteen inches thick; if of rubble, shall be at least
8 twenty inches thick; and shall be laid at least four feet
9 below any surface exposed to frost and upon solid ground
10 or upon piles properly spaced.

11 Every wooden building hereafter erected or altered,
12 the sills of which do not rest directly upon a foundation
13 as above described, but on an underpinning, shall have
14 such underpinning made of brick, stone or concrete; and
15 if the building is thirty-three feet or less in height above
16 the highest street level of its principal front, the under-
17 pinning, if of brick or concrete, shall be at least eight
18 inches thick, and if the building is of greater height, the
19 underpinning, if of brick or concrete, shall be at least
20 twelve inches thick; every underpinning of stone shall
21 be at least sixteen inches thick. Every wooden building
22 hereafter erected or altered and used for a workshop
23 or other like purpose, or as a temporary structure, may,
24 if the Superintendent approves, rest upon mud sills or
25 blocks, or on piles.

26 Every wooden building exceeding fifteen feet in
27 height hereafter erected or altered shall have all its parts
28 of sufficient strength to carry the weight of the super-
29 structure; shall be built with sills, posts, girts, studs and
30 plates, properly framed, mortised, tenoned, braced and
31 pinned in each story, or with a balloon frame; the posts
32 and girts shall be not less than four by six inches in cross
33 section, and the studs shall be not more than twenty
34 inches apart. Wooden buildings hereafter erected or
35 altered for other purposes than habitation shall not be
36 situated within five feet of the line of the lot unless the
37 side wall on such line or lines be of brick or concrete,
38 built to the under side of the roof.

1 SECTION 40. No wooden building hereafter erect-
2 ed or altered to be used as a habitation shall be more
3 than three stories in height above the basement, nor more
4 than forty-five feet in height above the street level, nor
5 shall any part of said building, except the eaves and
6 cornice, be nearer than three feet to the line of any
7 adjoining lot, or nearer than six feet to any other build-
8 ing, unless the side wall of such adjoining building is
9 constructed as a solid wall of brick or concrete or other
10 incombustible material not less than eight inches thick,
11 and carried twelve inches above the roof.

12 Every wooden building hereafter constructed to form
13 a block of two or more houses shall have a brick or con-
14 crete party wall between adjoining houses, which shall
15 be not less than eight inches thick, shall be carried twelve
16 inches above the roof, and shall be capped with a cover-
17 ing of stone, cement, or metal securely fastened to the
18 masonry.

Flooring During Construction.

1 SECTION 41. If, in the erection of an iron or steel
2 frame building, the spaces between the girders or floor
3 beams of a floor are not filled and covered by the per-
4 manent construction of such floors before another story

5 is added to the building, such provision shall be made to
6 protect the workmen from falling materials as shall be
7 satisfactory to the Superintendent.

ADDITIONAL REQUIREMENTS FOR TENEMENT HOUSES.

Definitions.

1 SECTION 42. Certain words are defined as follows:

2 1. A tenement house is any house, building, struc-
3 ture or portion thereof, occupied, or adapted for occu-
4 pation, as a dwelling by more than three families living
5 independently of one another and doing their cooking
6 upon the premises, or by more than two families
7 above the first story so living and cooking. A family
8 living in a tenement house may consist of one or more
9 persons.

10 An existing tenement house is any building erected
11 as such or converted to such use or altered for such use
12 or so used before the passage of this act, and any build-
13 ing adapted for such use, provided that a permit was
14 issued for the erection of said building before the passage
15 of this act.

16 A tenement house hereafter erected is any tenement
17 house other than an existing tenement house as above
18 defined.

19 2. A corner lot is a lot situated at the junction of
20 two or more streets, or of two or more streets and alleys
21 or open passageways not less than fifteen feet in width.

22 3. A yard is an open unoccupied space on the same
23 lot with a building and between the extreme rear line
24 of said building and the rear line of the lot.

25 4. A court is an open unoccupied space other than
26 a yard on the same lot with a building. An inner court
27 is a court not extending to a street, or alley, or open
28 passageway, or yard. An outer court is a court extend-
29 ing to a street, or alley, or open passageway, or yard.
30 A vent court is an inner court for the lighting and
31 ventilation of water-closets, bathrooms, public halls and

32 stair halls only. An intake is a passageway connecting
33 an inner court with a street, or alley, or open passageway
34 or yard.

35 5. A shaft, whether for air, light, elevator, dumb-
36 waiter, or any other purpose, is an enclosed space within
37 a building, extending to the roof, and covered either by
38 a skylight or by the roof. A vent shaft is a shaft used
39 solely to ventilate or light water-closet compartments or
40 bathrooms.

41 6. A public hall is a hall, corridor or passageway
42 not within an apartment.

43 7. A stair hall includes the stairs, stair landings and
44 those parts of the public hall through which it is neces-
45 sary to pass in going from the entrance floor to the roof.

46 8. An apartment is a room, or suite of two or more
47 rooms, occupied, or suitable for occupation, as a residence
48 for one family.

49 9. Repairs means any renewal of any existing part
50 of a building, or of its fixtures or appurtenances, which
51 does not lessen the strength of the building.

Fire-escapes.

1 SECTION 43. In all tenement houses hereafter
2 erected more than two stories in height above the
3 basement or cellar there shall be provided at least two
4 independent means of egress, one of which shall be one
5 of the following means of egress for escape from fire:
6 (1) an interior enclosed stairway as described in this
7 section; or (2) an exterior iron fire-escape and stairs as
8 hereinafter described; or (3) iron balconies connecting
9 with adjoining houses, or with adjoining parts of the
10 same house separated from each other by a brick parti-
11 tion wall in which there are no openings except such as
12 are protected with fireproof self-closing doors; and every
13 apartment above the first floor shall have access to one
14 of such means of egress.

15 1. Interior fire-escapes may consist of wooden cir-
16 cular stairs, occupying a space of a diameter not less than

17 four feet six inches. Such stairs shall extend from the
18 top floor to the level of the basement, where they shall
19 open into either an outer or an inner court or a yard.
20 These stairs shall be enclosed in the basement by brick
21 walls at least eight inches thick, and the stairs above
22 the basement shall be enclosed with fireproof partitions
23 clear to a ventilating skylight, and shall have on each
24 floor, in a public hall accessible from each apartment,
25 a fireproof self-closing door and fireproof frame; the
26 door to open into the corridor, and to be so arranged
27 that it cannot be opened from the stair side; such stair-
28 case to be provided with a ventilating skylight at least
29 nine square feet in area. The soffits of the stairs, if
30 they are of wood, shall be plastered on metal lathing.
31 No lock shall be placed on any skylight, but it may be
32 fastened on the inside by movable bolts or hooks.

33 2. Exterior fire-escapes shall be of iron, with iron
34 grated floor, and capable of bearing a load of seventy
35 pounds per square foot. The stair treads shall be of
36 iron, and the pitch of the stairs shall not exceed forty-
37 five degrees.

38 Balconies shall be at least three feet four inches wide,
39 and the stairs at least twenty inches. There shall be a
40 landing at the foot of each flight, and at the level of
41 the second floor there shall be cantilever ladders. The
42 rails on horizontal balconies and on the stairs shall be
43 at least two feet ten inches high at all points.

44 3. Balconies connecting adjoining houses, or adjoining
45 parts of the same house as described above, shall be
46 not less than thirty inches wide and capable of sustaining
47 a load of seventy pounds per square foot. Railings shall
48 be not less than two feet ten inches high, and shall be
49 of iron.

Bulkheads and Scuttles.

1 SECTION 44. Every tenement house of the first or
2 second class hereafter erected shall have in the roof a
3 fireproof bulkhead with a fireproof door, and shall have
4 fireproof stairs with a guide or hand rail leading to the

5 roof, except that in tenement houses which do not exceed
6 sixty-five feet in height, such bulkheads may be of wood
7 covered with metal on the outside and plastered on
8 metal lathing on the inside; the door shall be covered
9 with metal on both sides.

10 Every other tenement house shall have in the roof a
11 bulkhead or scuttle. No scuttle shall be less in size than
12 two feet by three feet, and all scuttles shall be covered
13 on the outside with metal, and shall be provided with
14 stairs or stationary ladders leading thereto and easily
15 accessible to all tenants of the building, and kept free
16 from encumbrance, and ready for use at all times. All
17 scuttles required in this act shall be in the ceiling of
18 the public hall on the top floor, and access through the
19 scuttle to the roof shall be direct and uninterrupted.
20 Scuttles shall be hinged so as to readily open. Every
21 bulkhead hereafter constructed in a tenement house shall
22 be constructed as provided for tenement houses here-
23 after erected and shall have stairs with a guide or hand
24 rail leading to the roof, and shall be kept free from
25 encumbrance at all times. No lock shall be placed on
26 any skylight, scuttle or bulkhead door, but either may be
27 fastened on the inside by movable bolts or hooks. All
28 key-locks on scuttles and on bulkhead doors shall be
29 removed. No stairway leading to the roof in a tene-
30 ment house shall be removed.

Stairs and Public Halls.

1 SECTION 45. Every tenement house hereafter erected
2 shall have at least one stairway extending from the
3 entrance floor to the roof, and every tenement house
4 hereafter erected containing more than one hundred
5 rooms above the first floor, exclusive of water-closets and
6 bathrooms, shall have an additional separate stairway for
7 every additional one hundred rooms or fraction thereof.
8 Public halls therein shall each be at least three feet wide
9 in the clear, and stairs shall be at least three feet wide
10 between the wall and the stair rail.

11 Each stairway shall have an entrance on the entrance
12 floor from a street or alley or open passageway or from
13 an outer court, or from an inner court which connects
14 directly with a street or alley or open passageway. All
15 stairs shall be constructed with a rise of not more than
16 eight inches, and with treads not less than nine inches
17 wide and not less than three feet long in the clear.
18 Where winders are used all treads at a point eighteen
19 inches from the strings on the wall side shall be at least
20 ten inches wide.

21 In every tenement house all stairways shall be pro-
22 vided with proper balusters and railings kept in good
23 repair. No public hall or stairs in a tenement house shall
24 be reduced in width so as to be less than the minimum
25 width prescribed in this section.

Stair Halls, Construction of.

1 SECTION 46. In tenement houses hereafter erected
2 which do not exceed five stories above the cellar or base-
3 ment or sixty-five feet in height the stair halls shall either
4 be constructed with iron beams and fireproof filling or
5 shall be filled in between the floor beams with at least
6 five inches of cement deafening. In such houses the stairs
7 may be of wood, provided that the soffits are covered
8 with metal laths and plastered with two coats of mortar,
9 or with good quality plaster-boards not less than one-half
10 inch in thickness made of plaster and strong fibre, and
11 all joints made true and well pointed, and provided that
12 such stairs are furnished with firestops.

Stair Halls, How Enclosed.

1 SECTION 47. In second-class and third-class tene-
2 ment houses hereafter erected, the stair halls may be
3 enclosed with wooden stud partitions, if such partitions
4 are covered on both sides with metal laths or with good
5 quality plaster-boards not less than one-half inch in thick-
6 ness, made of plaster and strong fibre, and all joints

7 made true and well pointed, and provided that the space
8 between the studs is filled in with brick and mortar or
9 other incombustible material to the height of the floor
10 beams.

Entrance Halls.

1 SECTION 48. All entrance halls in every tenement
2 house hereafter erected shall be at least three feet six
3 inches wide in the clear, from the entrance up to and
4 including the stair enclosure, and beyond this point at
5 least three feet wide in the clear, and shall comply with
6 all the conditions of the preceding sections of this act as
7 to the construction of stair halls, except that in a fireproof
8 tenement house hereafter erected it may be enclosed with
9 terra-cotta blocks not less than four inches thick and
10 angle-iron construction, instead of brick walls. If such
11 entrance hall is the only entrance to more than one stair-
12 way, that portion of said hall between the entrance and
13 the stairway shall be increased at least eighteen inches in
14 width in every part for each additional stairway.

Cellar Ceilings.

1 SECTION 49. In all tenement houses of the second
2 or third class hereafter erected, the cellar and basement
3 ceilings shall be lathed with metal laths and plastered.

Partitions, Construction of.

1 SECTION 50. In all tenement houses of the second
2 or third class hereafter erected all stud partitions which
3 rest directly over each other shall run through the
4 wooden floor beams and rest upon the cap of the parti-
5 tion below, and shall have the studding filled in solid
6 between the uprights to the depth of the floor beams
7 with incombustible materials.

Wooden Tenement Houses.

1 SECTION 51. Outside of the fire limits, tenement
2 houses not exceeding three stories in height above the

3 basement, nor eighteen hundred square feet in area, may
4 be erected of wood. No wooden tenement house shall
5 be increased in height so as to exceed three stories above
6 the basement or cellar.

Shafts.

1 SECTION 52. All elevator or dumb-waiter shafts
2 hereafter constructed above one story in any tenement
3 house shall be fireproof throughout, with fireproof self-
4 closing doors at all openings at each story. But nothing
5 in this section shall be so construed as to require enclos-
6 ures about elevators or dumb-waiters in the well-hole of
7 stairs where the stairs themselves are enclosed in walls of
8 incombustible materials, and are entirely constructed of
9 fireproof materials as hereinbefore provided. Every vent
10 shaft hereafter constructed in any tenement house shall
11 have an intake of at least the dimensions provided for
12 vent courts in Section 61, and shall be of the same min-
13 imum dimensions; and the skylight covering such vent
14 shaft shall be raised at all points at least one foot above
15 the top of the walls of such vent shaft, and the space
16 between the top of said walls and the skylight shall
17 remain at all points open and unobstructed except for
18 such supports essential to the stability of the skylight,
19 as may be approved by the Superintendent.

Bakeries and Fat Boiling.

1 SECTION 53. No bakery and no place of business in
2 which fat is boiled shall be maintained in any tenement
3 house which is not fireproof throughout, unless the ceiling
4 and side walls of said bakery or of the said place where
5 fat boiling is done are made safe by fireproof materials
6 around the same, and there shall be no openings either
7 by door or window, dumb-waiter shafts or otherwise,
8 between said bakery or said place where fat is boiled in
9 any tenement house and the other parts of the building.

Other Dangerous Businesses.

1 SECTION 54. All transoms and windows opening
2 into halls from any part of a tenement house where paint,
3 oil, spiritous liquors or drugs are stored for the purpose
4 of sale or otherwise shall be glazed with wire-glass, or
5 they shall be removed and closed up as solidly as the rest
6 of the wall. There shall be between any such hall and
7 such part of said tenement house a fireproof self-closing
8 door.

LIGHT AND VENTILATION.

Yards.

1 SECTION 55. The requirements for yards herein-
2 after provided shall be deemed sufficient for all tenement
3 houses.

4 Except in those cases hereinafter provided for, there
5 shall be, behind every tenement house hereafter erected,
6 a yard extending across the entire width of the lot, and
7 at every point open from the ground to the sky unob-
8 structed, except by fire-escapes or unenclosed outside
9 stairs.

10 The depth of said yard shall be measured from the
11 extreme rear wall of the house to the rear line of the lot,
12 and at right angles to said line, except that where there
13 is an alley or open passageway in the rear of the lot the
14 depth of the yard may be measured to the middle of said
15 alley or open passageway. On an irregular lot of sev-
16 eral depths, where there is more than one rear line to
17 the lot, such yard may extend across the entire width of
18 the lot in sections, provided that each section of the yard
19 is in every part and at every point of the minimum depth
20 hereinafter prescribed. Where the side lines of a lot
21 converge toward the rear, the depth of the yard shall be
22 such as to give it an area equal to the greatest width of
23 the yard multiplied by the depth hereinafter prescribed.

24 Except on a corner lot, the depth of the yard behind
25 every tenement house hereafter erected fifty feet in height

26 or less shall be not less than twelve feet in every part.
27 All yards without exception shall be increased in depth
28 at least one foot for every additional ten feet of height
29 of the building, or fraction thereof, above fifty feet.

30 Except as hereinafter otherwise provided, the depth
31 of the yard behind every tenement house hereafter erected
32 upon a corner lot shall not be less than six feet in every
33 part. But where such corner lot is more than twenty-five
34 feet in width, the depth of the yard for that portion in
35 excess of twenty-five feet shall be not less than twelve
36 feet in every part, and shall increase in depth as above
37 provided.

38 Whenever a tenement house is hereafter erected upon
39 a lot which runs through from street to street, or from
40 a street to an alley or open passageway, and said lot is
41 one hundred and fifty feet or more in depth, said yard
42 space shall be left midway between the two streets, and
43 shall extend across the entire width of the lot, and shall
44 be not less than twenty-four feet in depth from wall to
45 wall, and shall be increased in depth at least two feet
46 for every additional ten feet in height of the building,
47 or fraction thereof, above fifty feet.

48 When a tenement house hereafter erected does not
49 front upon a street, a public alley, or a passageway, not
50 less than fifteen feet wide, the requirements in this section
51 as to yards shall apply to the front of such tenement
52 house as well as to the rear. Neither the yard behind
53 one tenement house nor any part thereof shall be deemed
54 to satisfy in whole or in part the requirement of a yard
55 in front of another tenement house.

Cases in Which No Yard Shall Be Required.

1 SECTION 56. No yard shall be required behind a
2 tenement house hereafter erected upon a lot which abuts
3 at the rear upon a railroad right of way, a cemetery or
4 a public park.

5 No yard shall be required behind a tenement house
6 hereafter erected upon a lot entirely surrounded by

7 streets or by streets, alleys or open passageways, not less
8 than fifteen feet in width, or by such streets, alleys, and
9 passageways and a railroad right of way, a cemetery or
10 a public park.

11 No yard shall be required behind a tenement house
12 hereafter erected upon a lot less than one hundred and
13 fifty feet deep and running through from street to street
14 or from a street to an alley or open passageway not less
15 than fifteen feet in width, or upon a corner lot adjoining
16 a lot less than one hundred and fifty feet deep and
17 running through from street to street, or from a street
18 to such an alley or open passageway.

19 No yard shall be required behind a tenement house
20 hereafter erected upon a corner lot adjoining a lot more
21 than one hundred and fifty feet deep and running
22 through from street to street or from a street to an
23 alley or open passageway not less than fifteen feet in
24 width; but if there be no yard, an outer court upon such
25 corner lot shall extend from the street along the line of
26 such adjoining lot to a point in line with the middle line
27 of the block; the width of said court to be not less than
28 the width of court prescribed in the ensuing paragraph.

29 No yard shall be required behind a tenement house
30 hereafter erected upon a corner lot adjoining two or
31 more lots any one of which bounds upon a single street,
32 or alley, or open passageway not less than fifteen feet
33 in width; but if there be no yard, an outer court upon
34 such corner lot shall extend from the street, or from such
35 alley or open passageway along a lot line either to the
36 extreme rear of an adjoining lot or to the extreme rear
37 of said corner lot; *provided*, that the width of said court
38 measured from the lot line to the opposite wall of the
39 building, for tenement houses fifty feet or less in height,
40 shall be not less than six feet in every part, and for every
41 additional ten feet of height of the tenement house shall
42 be increased one foot throughout the whole length of
43 said court.

Courts.

1 SECTION 57. No court of a tenement house here-
2 after erected shall be covered by a roof or skylight, but
3 every such court shall be at every point open to the sky
4 unobstructed. Except such courts as are provided for
5 in Section 56, all courts, except for fire-escapes, may
6 start at the second tier of beams.

Outer Courts.

1 SECTION 58. The provisions of this section shall
2 apply only to tenement houses hereafter erected. Where
3 one side of an outer court is situated on the lot line, the
4 width of the said court, measured from the lot line to
5 the opposite wall of the building, for tenement houses
6 fifty feet or less in height shall be not less than six feet
7 in every part; and for every ten feet of increase or
8 fraction thereof in height of such tenement houses, such
9 width shall be increased one foot throughout the whole
10 length of the court, and except where the court runs
11 through from the yard to the street, said width shall
12 never be less than one-eighth of the length of the court.

13 Where an outer court is located between wings or
14 parts of the same building, or between different build-
15 ings on the same lot, the width of the court, measured
16 from wall to wall, for tenement houses fifty feet or less
17 in height shall be not less than twelve feet in every part,
18 and for every ten feet of increase or fraction thereof
19 in the height of the said building, such width shall be
20 increased two feet throughout the whole length of the
21 court. The depth of such courts shall never exceed four
22 times their width.

23 Wherever an outer court changes its initial hori-
24 zontal direction, or wherever any part of such court
25 extends in a direction so as not to receive direct light
26 from the street or yard, or from an alley, or open
27 passageway not less than fifteen feet in width, the length
28 of that part of the court shall never exceed its width,

29 such length to be measured from the point at which the
30 change of direction begins. - Wherever an outer court
31 between parts of the same building is twelve feet or less
32 in depth, its width may be one-half its depth, provided
33 that such width is never less than four feet in the clear.
34 This exception shall also apply to every offset or recess
35 in outer courts. And no window except windows of
36 water-closet compartments, bathrooms or halls shall open
37 upon any offset or recess less than four feet in width.

Inner Courts.

1 SECTION 59. The provisions of this section shall
2 apply only to tenement houses hereafter erected. Where
3 ~~one side of an inner court is situated on the lot line and~~
4 the building does not exceed fifty feet in height, the least
5 width of the court shall be not less than eight feet, and
6 the area of the court shall be not less than one hundred
7 and twenty-eight square feet. For every ten feet or
8 fraction thereof of increase in the height of the building
9 above fifty feet the minimum width of such inner courts
10 shall be increased by one foot, and the area thereof shall
11 never be less than twice the square of such minimum
12 width. Where an inner court is not located on the lot
13 line, but is enclosed on all four sides, and the building
14 does not exceed fifty feet in height, the least width of
15 said court shall be not less than sixteen feet, and the
16 area not less than two hundred and fifty-six square feet.
17 For every ten feet, or fraction thereof, of increase in
18 the height of said building above fifty feet, the minimum
19 width of such inner courts shall be increased by two feet,
20 and the area of the court shall never be less than the
21 square of such minimum dimension.

Vent Courts.

1 SECTION 60. Inner courts used solely for the light-
2 ing and ventilation of water-closets, bathrooms, public
3 halls or stair halls, or for interior fire-escapes, may be

4 constructed in any tenement house, and shall be not less
5 than fifteen square feet in area, or less than three feet
6 in the least horizontal dimension for buildings fifty feet
7 or less in height. For every increase of ten feet or frac-
8 tion thereof in the height of such buildings, the least
9 dimension shall be increased by one foot, and the area
10 by not less than eight square feet.

Intakes.

1 SECTION 61. Every inner court in a tenement house
2 hereafter erected shall be provided with one or more
3 horizontal intakes at the bottom. Such intakes, in vent
4 courts, shall not be less than four square feet in area, so
5 arranged as to be easily cleaned; in other inner courts
6 they shall be not less than three feet wide and seven feet
7 high, and there shall be at least two open grill doors,
8 containing not less than fifteen square feet of unob-
9 structed openings, one at the inner court and the other
10 at the street or yard, as the case may be.

11 Nothing contained in the foregoing sections concern-
12 ing outer and inner courts shall be construed as prohib-
13 iting windows in walls that cut off the angles of such
14 courts, provided that the running length of the walls
15 containing such windows does not exceed six feet.

Buildings on the Same Lot with Tenement Houses.

1 SECTION 62. No tenement house shall hereafter be
2 so enlarged or its lot so diminished, and no building of
3 any kind shall be hereafter so placed upon the same lot
4 with a tenement house, as to decrease the minimum
5 depth of yards or the minimum size of courts or yards
6 prescribed in this act for tenement houses hereafter
7 erected.

Rooms, Lighting and Ventilation of.

1 SECTION 63. In every tenement house hereafter
2 erected there shall be in each room, except water-closet

3 compartments and bathrooms, windows of a total area
4 of at least one-eighth of the floor area of the room, open-
5 ing directly on a street or public alley or open passage-
6 way not less than fifteen feet wide or upon a yard or
7 court of the dimensions hereinbefore specified, or upon
8 a railroad right of way, cemetery or public park; and
9 such windows shall be located so as properly to light
10 all parts of the room. The top of at least one window
11 shall be not less than eight feet above the floor, and the
12 upper half of it shall be made so as to open the full
13 width.

14 Every alcove in every tenement house hereafter
15 erected shall be provided with an opening into a room,
16 such opening to be equal in area to eighty per cent of
17 that side of the alcove in which the opening is located,
18 and the alcove shall have at least one window of not
19 less than fifteen square feet of glazed surface opening,
20 as provided in this section.

Rooms, Size of.

1 SECTION 64. In every tenement house hereafter
2 erected all rooms, except water-closet compartments and
3 bathrooms, shall be of the following minimum sizes: In
4 each apartment there shall be at least one room contain-
5 ing not less than one hundred and twenty square feet of
6 floor area and provided with a chimney flue and thimble,
7 except where said room is furnished with heat from a
8 central heating apparatus, and every other room shall
9 contain at least ninety square feet of floor area. Each
10 room shall be in every part not less than eight and one-
11 half feet high from the finished floor to the finished ceil-
12 ing; provided that only one-half of an attic room need
13 be eight and one-half feet high.

14 No portion of a room in any tenement house shall
15 be partitioned off so as to form a room not conforming
16 to the provisions of Sections 63 and 64, or so as to form
17 an alcove not conforming to Sections 63 and 70.

Public Halls.

1 SECTION 65. Except as otherwise provided in Sec-
2 tion 66, in every tenement house hereafter erected every
3 public hall shall have at least one window opening
4 directly upon a street, a public alley or open passageway
5 not less than ten feet in width, a railroad right of way,
6 a cemetery or a public park, or upon a yard or court or
7 a vent court as provided in Section 60. Either such
8 window shall be at the end of said hall, with the plane
9 of the window substantially at right angles to the axis of
10 the hall, or there shall be at least one window opening
11 as above prescribed in every twenty feet in length or
12 fraction thereof of the hall; but this provision for one
13 window in every twenty feet of hallway shall not apply
14 to that part of the entrance hall between the entrance
15 and the first flight of stairs, provided that the entrance
16 door contains not less than five square feet of glazed
17 surface. At least one of the windows provided to light
18 each public hall shall be at least two feet six inches wide
19 and five feet high, measured between the stop beads.
20 Any part of a hall which is shut off from any other
21 part of said hall by a door or doors shall be deemed a
22 separate hall within the meaning of this section.

Windows for Stair Halls, Size of.

1 SECTION 66. In every tenement house hereafter
2 erected the aggregate area of windows to light or ven-
3 tilate stair halls on each floor shall be at least fifteen
4 square feet; *provided, however*, that when there shall
5 be, within the space enclosed by the stairway and its
6 landings, from the second story upward, an open area
7 for light and ventilation whose least horizontal dimen-
8 sion shall be equal to the width of the stairs, but in no
9 case less than three feet, then the windows required in
10 Sections 65 and 66 may be omitted.
11 There shall be in the roof, directly over each stair-
12 well, in all tenement houses hereafter erected, without

13 windows as above provided, a ventilating skylight pro-
14 vided with ridge ventilators, having a minimum opening
15 of forty square inches, or else such skylight shall be
16 provided with fixed or movable louvres. The glazed
17 roof of the skylight shall be not less than twenty square
18 feet in area.

Privacy.

1 SECTION 67. In every apartment of four or more
2 rooms in a tenement house hereafter erected, at least one
3 water-closet compartment shall be accessible without pass-
4 ing through any bedroom.

Basements in Tenement Houses.

1 SECTION 68. In tenement houses no room in the
2 cellar or basement shall be occupied for living purposes,
3 unless all of the following conditions are complied with:
4 1. Such room shall be at least eight and one-half
5 feet high in every part from the floor to the ceiling,
6 and shall contain not less than ninety feet floor
7 area.

8 2. There shall be appurtenant to such room the use
9 of a water-closet, separate therefrom, constructed and
10 arranged as required by Section 69.

11 3. Such room shall have a window or windows
12 opening upon the street, an alley or open passageway
13 not less than fifteen feet in width, a railroad right of
14 way, cemetery or public park or upon a yard or court.
15 The total area of windows in such room shall be at least
16 one-eighth of the floor area of the room, and one-half
17 of the sash shall be made to open full width, and the top
18 of each window shall be within six inches of the ceiling.
19 All steam heating pipes passing through such rooms shall
20 be covered with a suitable non-conducting material.

21 4. The floor of such rooms shall be damp-proof
22 and waterproof, and all walls surrounding such room
23 shall be damp-proof.

Water-closets in Tenement Houses Hereafter Erected.

1 SECTION 69. In every tenement house hereafter
2 erected there shall be a separate water-closet in a separate
3 compartment within each apartment ~~(of four or more~~
4 ~~rooms.)~~ Where apartments consist of less than four
5 rooms there shall be at least one water-closet for every
6 three rooms, and on the same floor with said rooms.
7 Every such water-closet shall be placed in a compartment
8 completely separated from every other water-closet, and
9 such compartment shall be not less than two feet and
10 four inches wide, and shall be enclosed with plastered
11 partitions, or some equally substantial material, which
12 shall extend to the ceiling. } Such compartment shall have
13 a window, opening directly, or through a straight hori-
14 zontal shaft of the same dimensions as the window and
15 not more than four feet long, upon a street, a railroad
16 right of way, cemetery or public park or a yard or alley or
17 open passageway not less than four feet wide, or upon a
18 vent court or upon a covered passageway not more than
19 twenty feet long and at least twenty feet wide, and twenty
20 feet high. Every such window shall be at least one foot
21 by three feet between stop beads; and the whole window
22 shall be made so as to open readily. When, however,
23 such water-closet compartment is located on the top floor
24 and is lighted and ventilated by a skylight over it, no
25 window shall be necessary, provided that the roof of
26 such skylight contains at least three square feet of glazed
27 surface and is arranged so as to open readily. Nothing
28 in this section in regard to the ventilation of water-closet
29 compartments shall apply to a water-closet hereafter
30 placed in an existing tenement house, to replace a defec-
31 tive fixture in the same position and situation. Every
32 water-closet compartment in any tenement house shall be
33 provided with proper means of lighting the same at
34 night. If fixtures for gas or electricity are not provided
35 in such compartment, then the door of such compart-
36 ment shall be provided with translucent glass panels, or
37 with a translucent glass transom, not less in area than

38 four square feet. The floor of every such water-closet
39 compartment shall be made waterproof with asphalt,
40 tile, stone or some other waterproof material; and such
41 waterproofing shall extend at least six inches above the
42 floor on all sides of the compartment except at the door
43 opening, so that the floor can be washed or flushed with-
44 out leaking. No drip trays shall be permitted. No
45 water-closet fixtures shall be inclosed with any woodwork.

Lighting and Ventilation of Existing Tenement Houses.

1 SECTION 70. Excepting water-closet compartments
2 and bathrooms, wherever a room in any tenement house
3 has a window or windows of less than nine square feet of
4 glazed surface opening on a street, a railroad right of
5 way, cemetery, public park, alley or open passageway
6 not less than ten feet in width, such window or windows
7 shall be enlarged and provided with the above-mentioned
8 glazed surface, and wherever such room does not open
9 as above provided, or opens upon an alley or open pas-
10 sageway less than ten feet in width or upon a shaft
11 or upon a court less than six feet in its least dimension,
12 then such room shall be provided with a sash window
13 communicating with another room in the same apart-
14 ment, having windows of at least the superficial area pre-
15 scribed for the windows of rooms in tenement houses
16 hereafter erected and opening on a street, a railroad
17 right of way, cemetery, public park or alley or open
18 passageway at least ten feet in width, or on a court or
19 courts at least equivalent to the courts required in Sec-
20 tions 58 and 59; and such new sash window shall contain
21 not less than fifteen square feet of glazed surface and
22 shall be made so as to open readily. One wall of every
23 alcove in an existing tenement house shall be provided
24 with an opening equal in area to eighty per cent of the
25 wall. No tenement house shall be so altered as to re-
26 duce the provisions for the light and ventilation of any
27 room or alcove or public hall or stair hall below the
28 requirements of this act.

Skylights.

1 SECTION 71. In every existing tenement house there
2 shall be in the roof, directly over each stairwell, a ven-
3 tilating skylight, provided with ridge ventilators and also
4 with fixed or movable louvres or movable sashes. But
5 this section shall not apply to any tenement house now
6 having windows as provided in Section 65 or a bulkhead
7 in the roof over the main stairs, which bulkhead is
8 provided with windows made so as to open readily,
9 and with not less than twelve square feet of glass in
10 the top of the bulkhead. All skylights hereafter placed
11 in any tenement house shall conform to the provisions
12 of Section 66. All the existing dome lights or other
13 obstructions to skylight ventilation shall be removed.

14 Where the public hall in an existing tenement house
15 is not provided with windows opening as provided in
16 Section 65, and where there is not a stairwell as pro-
17 vided in Section 66, all doors leading from such public
18 hall into apartments shall be provided with translucent
19 glass panels of an area of not less than four square feet
20 for each door; or such public hall may be lighted by a
21 window or windows at the end thereof with the plane of
22 the window at right angles to the axis of the hall, said
23 window opening upon the street, a railroad right of way,
24 cemetery, public park, or an alley or open passageway
25 at least ten feet in width, or upon a yard or court of the
26 dimensions hereinbefore provided.

Water-closets in Existing Tenement Houses.

1 SECTION 72. In existing tenement houses the wood-
2 work enclosing the space underneath the seat of all water-
3 closets used in common by two or more families shall be
4 removed and such space shall be left open. The floor or
5 other surface beneath and around such closet shall be
6 maintained in good order and repair.

7 Every such water-closet shall be located in a com-
8 partment completely separated from every other water-

9 closet. There shall be provided at least one water-
10 closet for every three families or for every nine rooms
11 in every existing tenement house.

12 Nothing in this section in regard to the separation of
13 water-closet compartments from each other shall apply
14 to a general toilet room containing several water-closets,
15 hereafter placed in a tenement house, provided that such
16 water-closets are supplemental to the water-closet accom-
17 modations required by law for the use of the tenants of
18 the said house.

Water Supply.

1 SECTION 73. In every tenement house hereafter
2 erected there shall be in each apartment a proper sink
3 with running water.

4 Every existing tenement house shall have water fur-
5 nished in sufficient quantity at one or more places on
6 each floor occupied by or suitable to be occupied by one
7 or more families. The owner shall provide proper and
8 suitable tanks, pumps or other appliances to receive and
9 to distribute a sufficient supply of water at each floor in
10 the said house at all times of the year, during all hours of
11 the day and night.

12 The woodwork enclosing sinks located in the public
13 halls or stairs shall be removed, and the space underneath
14 the sinks shall be left open. The floors and wall surfaces
15 beneath and around the sink shall be maintained in good
16 order and repair.

Drainage of Courts and Yards.

1 SECTION 74. In every tenement house all courts,
2 areas, intakes and yards shall be properly graded, drained
3 or otherwise surfaced to the satisfaction of the Super-
4 intendent.

Receptables for Garbage and Ashes.

1 SECTION 75. The owner of every tenement house
2 shall provide therefor suitable covered water-tight re-

3 ceptacles for ashes, rubbish, garbage, refuse and other
4 matter. No person shall place ashes, rubbish, garbage,
5 refuse or other matter in the yards, open areas or alleys
6 connected with, or appurtenant to, any tenement house
7 except in suitable receptacles provided for the same.

Powers of the Superintendent.

1 SECTION 76. The Superintendent shall not dispense
2 with any of the requirements of Sections 42 to 75,
3 inclusive.

THEATRES.

DEFINITION.

1 SECTION 77. Every building hereafter erected so
2 as to contain an audience hall and a stage, with curtain,
3 movable or shifting scenery, and machinery, adapted
4 for the giving of plays, operas, spectacles or similar
5 forms of entertainment, and of a size to provide seats
6 for more than five hundred spectators shall be a theatre
7 within the meaning of this act. No existing building
8 shall be altered and used as a theatre, unless it conforms
9 to the provisions of this act for a new theatre.

CONSTRUCTION.

1 SECTION 78. Every theatre hereafter built to con-
2 tain an audience of more than a thousand people or with
3 more than one gallery or balcony above the main floor,
4 and every theatre, the stage of which is more than five
5 feet above the level of the principal street upon which
6 the theatre abuts, shall be built of fireproof construction
7 throughout, except that the floor boards may be of wood,
8 and the steel work of the stage, of the fly galleries, and
9 of the rigging loft need not be fireproofed.
10 Theatres seating less than one thousand persons, of
11 which the stage is not over five feet above the level of the
12 principal street, may be of second-class construction, but
13 no theatre nor place of amusement shall be built of
14 third-class construction.

Open Courts.

1 SECTION 79. Every theatre built in a block not on
2 a corner shall have an open court or passageway on
3 both sides extending from the proscenium line to the
4 line of the street on the front, or in case the build-
5 ing abuts on a street both in front and rear, these pass-
6 ages may extend from the line of the front of the audi-
7 torium to the line of rear street. These passages shall
8 be at least six feet wide throughout their length, and
9 shall not be closed by any locked gate or doorway. They
10 shall immediately adjoin the auditorium, or a side passage
11 or lobby directly connected therewith. These passages
12 shall be open to the sky opposite the whole depth of the
13 auditorium, but may be carried out to the street front
14 or rear through passages enclosed by brick walls or other
15 fireproof material equally efficient, and covered by a solid
16 brick vault at least eight inches thick, each passage to be
17 not less than six feet wide and ten feet high throughout.

1 SECTION 80. Every theatre built upon the corner
2 of two streets shall have one inner court on the side of
3 the building away from the side street, such court to be
4 of the same description as the courts provided for in the
5 preceding paragraph; but if the theatre is so planned
6 that the outside walls on two sides of the auditorium
7 abut directly upon a public or private street or way, both
8 courts may be omitted.

Stores, Etc.

1 SECTION 81. Nothing in this act shall be construed
2 to prohibit the use of any part of a theatre building for
3 stores, offices, or for habitation, provided that the parts so
4 used shall be built with exits to the street entirely distinct
5 from the rest of the building, and shall be separated
6 from the rest of the building by solid partitions or walls,
7 without any openings in the same.

Floor Levels.

1 SECTION 82. In all theatres, the entrances shall be
2 not more than one step above the level of the side-walk
3 of the main street.

Proscenium Wall.

1 SECTION 83. The stage of every theatre shall be
2 separated from the auditorium by a wall of fireproof
3 construction, which wall shall extend the whole width
4 of the auditorium and the whole height to the roof of
5 the portion occupied by the stage. There shall be no
6 openings through this wall except the curtain opening,
7 one doorway each side behind the boxes, and one door-
8 way which shall be located at or below the level of the
9 stage. The doorways shall not exceed twenty-one super-
10 ficial feet each, and shall have standard fire-doors hung
11 in a manner satisfactory to the Superintendent. The
12 finish or decorative features around the curtain opening
13 of every theatre shall be of fireproof material.

14 In all buildings of second-class construction, the pro-
15 scenium wall must be of brick laid in mortar composed
16 of at least one-third cement to two-thirds lime, must be
17 twenty inches thick in the basement, not less than sixteen
18 inches thick to a height of forty feet above the stage
19 level and not less than twelve inches thick for remaining
20 height. In a building of first-class construction, this
21 partition may be constructed of any of the approved
22 fireproof materials provided for in this ordinance.

Curtain.

1 SECTION 84. The proscenium or curtain opening
2 of every theatre shall have a fire-resisting curtain rein-
3 forced by wire netting, or otherwise strengthened. If
4 of iron, or similar heavy material, and made to lower
5 from the top, it shall be so arranged as to be stopped
6 securely at a height of seven feet above the stage floor,
7 the remaining opening being closed by a curtain or val-
8 ance of fire-resisting fabric.

Stage Floor.

1 SECTION 85. In theatres of first-class construction,
2 the part of the stage floor, usually equal to the width
3 of the proscenium opening, used in working scenery,
4 traps or other mechanical apparatus, may be of wood,
5 and no flooring used thereon shall be less than one and
6 one-eighth inches in thickness.

Ventilators.

1 SECTION 86. There shall be one or more ventila-
2 tors near the centre, and above the highest part of the
3 stage of every theatre, of a combined area of opening
4 satisfactory to the Superintendent, and not less than one-
5 tenth of the area of the undivided floor space behind the
6 curtain at the stage floor level. The openings in every
7 such ventilator shall be closed by valves or louvres so
8 counterbalanced as to open automatically, which shall
9 be kept closed when not in use, by a fusible link and
10 cord reaching to the prompter's desk, and readily oper-
11 ated therefrom. Such cord shall be of combustible mate-
12 rial, and so arranged that if it is severed the ventilator
13 will open automatically.

14 Skylight coverings for ventilators shall have sheet
15 metal frames set with double-thick glass, each pane there-
16 of measuring not less than three hundred square inches,
17 or shall be protected with wire glass. If wire glass is
18 not used, a suitable wire netting shall be placed im-
19 mediately beneath the glass, but above the ventilator
20 opening. Illuminating fixtures over the auditorium shall
21 be suspended and secured in a manner approved by the
22 Superintendent.

23 Glass on illuminating fixtures over the auditorium
24 shall be secured from danger of falling as the Super-
25 intendent shall require, but in no case shall any glass
26 more than six inches in diameter or length be hung over
27 the auditorium unless protected from falling by a wire
28 netting or similar device satisfactory to the Superin-
29 tendent.

Seats in Auditorium.

- 1 SECTION 87. All seats in the auditorium excepting
2 those contained in boxes shall be spaced not less than
3 thirty inches from back to back, measured in a horizon-
4 tal direction, and shall be firmly secured to the floor. No
5 seat in the auditorium shall have more than six seats in-
6 tervening between it and an aisle, on either side.
7 The platforms for seats in balconies and galleries
8 shall nowhere have a greater rise than twenty-one inches,
9 nor be less than thirty inches from back to back.

Aisles.

- 1 SECTION 88. All aisles on the respective floors in
2 the auditorium, having seats on both sides of the same,
3 shall be not less than thirty inches wide where they begin,
4 and shall be increased in width toward the exits in the
5 ratio of one inch to five running feet. Aisles having seats
6 on one side only shall be not less than two feet wide at
7 their beginning and shall increase in width, the same as
8 aisles having seats on both sides.

Changes in Level.

- 1 SECTION 89. All changes in the levels of the floors
2 of such buildings, except under stairways, from story to
3 story, and except the necessary steps in galleries and bal-
4 conies rising toward the exits, shall be made by inclines
5 of no steeper gradient than two in ten within the audito-
6 rium and rising toward the exits, and one in ten for all
7 others.

Lobbies.

- 1 SECTION 90. Preceding each division of the theatre
2 there shall be foyers, lobbies, corridors, or passages, the
3 aggregate capacity of which on each floor or gallery shall
4 be sufficient to contain the whole number to be accommo-
5 dated on such floor or gallery in the ratio of one square
6 foot of floor room for each person.

Stage Doors.

1 SECTION 91. There shall be not less than two exit
2 doors, each not less than three feet in width, situated on
3 opposite sides of the stage, and opening directly upon a
4 street, alley, court, courtway or passage leading to a
5 public thoroughfare.

Room Exits.

1 SECTION 92. All rooms in theatres for the use of
2 persons employed therein shall have passages to at least
3 two independent means of exit.

Doors to Open Outward.

1 SECTION 93. All doors of exit or entrance shall
2 open outward, and shall be hung so as to swing in such a
3 manner as not to become an obstruction in a passage or
4 corridor, and no such doors shall be fastened so as to be
5 inoperative when the building is occupied by an audience.

False Doors.

1 SECTION 94. No mirrors shall be so placed as to
2 give the appearance of a doorway or exit, hallway, or
3 corridor, nor shall there be any false doors or windows.

Main Floor and First Gallery Exits.

1 SECTION 95. A common exit may serve for the
2 main floor of the auditorium and the first gallery, pro-
3 vided that its capacity be equal to the aggregate capacity
4 of the outlets from the main floor and the said gallery;
5 and provided that the lowermost run of any exit leading
6 from a gallery shall not open directly at right angles with
7 the central axis of a common exit unless there is a clear
8 space or landing of at least one and one-quarter times the
9 width of the exit between the foot of such exit and such
10 centre line or nearest exit doorway.

Exits.

1 SECTION 96. Two distinct and separate exits shall
2 be provided for each gallery and balcony above the main
3 floor; and the same shall be located on opposite sides of
4 the galleries.

5 All gallery or balcony exits shall start with a width
6 of not less than four feet at the uppermost gallery.

7 Exits from balconies and galleries shall not com-
8 municate with the basement or cellar.

Aggregate Width of Exits.

1 SECTION 97. The aggregate width of all the exits
2 previously described shall be estimated on a basis of not
3 less than twenty inches for every one hundred persons for
4 whom seats are provided in the sections of the auditorium
5 served by the respective exits.

Emergency Exits.

1 SECTION 98. In addition to the exits previously de-
2 scribed there shall be one exit from each side of each
3 gallery, balcony, and main floor of auditorium, at least
4 five feet wide, leading to exterior balconies not less than
5 four feet wide and twenty feet long on each side of the
6 auditorium. From such balconies there shall be stair-
7 cases extending to the ground level, which may be count-
8 erweighted, with risers of not over eight and one-half
9 inches and treads of not less than nine and one-half inches,
10 exclusive of nosing. The aggregate width of these emer-
11 gency stairs shall be not less than ten inches for every one
12 hundred people served thereby, no single stairs being less
13 than thirty inches wide. If counterweighted, these stairs
14 shall be lowered during all performances.

15 Where such stairs are in an interior court, each run
16 shall be covered by a light awning of iron.

17 Nothing herein shall prohibit the building of emer-
18 gency stairs and exits inside the walls of the building,

19 provided that they are surrounded by a fireproof partition
20 not less than four inches thick separating the exits and
21 stairways from the audience room or auditorium.

Additional Requirements.

1 SECTION 99. The Superintendent shall have power
2 to require a greater number or capacity of exits than is
3 herein prescribed.

4 In every theatre there shall be over every exit, on the
5 inside, and over every opening to a fire-escape, on the in-
6 side, an illuminated sign, bearing the word "exit" or
7 "fire-escape," respectively, in letters not less than four
8 inches high. The lights for the exit signs, passages, stairs,
9 lobbies, auditoriums, rear of auditoriums, balconies, gal-
10 leries, and for the balconies and stairs outside the build-
11 ing, shall be so arranged that they can be turned on or off
12 independently of the means provided on the stage or in
13 any part of the building in the rear of the proscenium
14 wall. Every exit sign shall be kept illuminated, and
15 every outside balcony and fire-escape shall be kept well
16 lighted during the performance, except outside exits dur-
17 ing a performance before sunset.

18 Plans showing the exits and stairways shall be legibly
19 printed so as to occupy a full page of every programme
20 or play-bill.

Stairs.

1 SECTION 100. The cut of the stair stringers shall
2 not exceed seven and one-half inches rise, nor be less than
3 ten and one-half inches tread. There shall be no flights
4 of stairs of more than fifteen or less than three steps be-
5 tween landings.

Landings of Stairs.

1 SECTION 101. Every landing shall be at least four
2 feet wide. When straight stairs return directly on them-
3 selves, a landing of the full width of both flights,
4 without any steps, shall be provided. The outer line of

5 landings shall be curved to a radius of not less than two
6 feet to avoid square angles. Stairs turning at an angle
7 shall have a proper landing without winders introduced
8 at the turn. No door shall open immediately upon a
9 flight of stairs, but a landing at least two feet wider than
10 the width of the door opening shall be provided between
11 such stairs and such door. When two side flights connect
12 with one main flight, no winders shall be introduced, and
13 the width of the main flight shall be at least equal to the
14 aggregate width of the side flights.

Hand-rails.

1 SECTION 102. All enclosed stairways shall have, on
2 both sides, strong hand-rails, firmly secured to the wall,
3 about three inches distant therefrom and about three feet
4 high above the stairs.

5 All stairways eight feet and over in width shall be
6 provided with a central rail of metal or hard wood, not
7 less than two inches in diameter, placed at a height of
8 about three feet above the centre of the treads, supported
9 on wrought metal or brass standards of sufficient strength,
10 securely bolted to the treads or risers of the stairs; and at
11 the head of each flight of stairs, and on each side of the
12 landing, the post or standard shall be at least six feet in
13 height, and the rail shall be secured to the post.

Measurements for Width of Stairs.

1 SECTION 103. The width of all stairs shall be
2 measured in the clear between the hand rails.

3 No winding or circular stairs shall be permitted.

Radiators Forbidden in Passageways.

1 SECTION 104. No coil or radiator or floor register
2 shall be placed in any aisle or passageway used as an exit;
3 but all such coils and radiators may be placed in recesses
4 formed in the wall or partition to receive the same.

5 No boiler, furnace, engine or heating apparatus, ex-
6 cept steam, hot-water or hot-air pipes or radiators, shall
7 be located under the auditorium or under any passage or
8 stairway or exit of any theatre.

Sprinklers and Standpipes.

9 There shall be at least two two-inch high-service stand-
10 pipes on the stage of every theatre, with ample provision
11 of hose nozzles at each level of the stage on each side,
12 and the water shall be kept turned on during the occupa-
13 tion of the building by an audience. The said pipes shall
14 in no case be sealed, and shall have two gates, one above
15 the other, with a proper test or waste valve; the lower
16 gate to be kept open at all times. The proscenium open-
17 ing of every theatre shall be provided with a two and
18 one-half inch perforated iron pipe, or equivalent equip-
19 ment of automatic or open sprinklers, so constructed as to
20 form, when in operation, a complete water curtain for
21 the whole proscenium opening, and there shall be for
22 the rest of the stage a complete system of fire apparatus
23 and perforated iron pipes, automatic or open sprinklers.
24 Such pipes or sprinklers shall be supplied with water by
25 high pressure service, and shall be at all times ready for
26 use.

PLACES OF PUBLIC ASSEMBLY.

1 SECTION 105. Every building hereafter erected as a
2 place of public worship or with a hall or assembly-room
3 to contain an audience of more than a thousand persons,
4 or with more than one superimposed gallery or balcony, or
5 so built that the main floor of said assembly-room or hall
6 is raised more than eight feet above the level of the
7 principal street upon which the building abuts, shall be
8 of fireproof construction throughout, except the roof,
9 which may be of second-class construction. Such struc-
10 tures other than the above described may be of second-
11 class construction, but no building of the classes described
12 under this section shall be of third-class construction in
13 any part of the city.

14 The capacity of a hall or assembly-room shall be
15 estimated on the basis of six square feet for each person.

16 If several halls or assembly-rooms are provided in
17 one building, their aggregate capacity shall be considered
18 as determining whether or not the building shall be of
19 fireproof construction, unless the several halls are en-
20 closed by or separated from each other by fireproof
21 walls, with fireproof doors in the same, in which case
22 the building may be of second-class construction.

23 No existing building shall be altered to contain a
24 hall or assembly-room exceeding the foregoing dimen-
25 sions, unless the whole building as altered shall conform
26 to the provisions of this act.

Moving Picture Shows.

1 SECTION 106. All moving picture shows shall be
2 subject to the provisions of Chapter 176 and of Chapter
3 437 of the acts of the year nineteen hundred and five,
4 and of any amendments thereof or additions thereto
5 now or hereafter made.

Exits, Etc.

1 SECTION 107. Every building hereafter erected
2 containing a hall or assembly-room shall conform to all
3 the aforesaid requirements as to exits, stairways, exit
4 lights, aisles, and seats which apply to theatres, subject
5 to such exceptions as the board of appeal shall approve.

ROOF GARDENS.

1 SECTION 108. Nothing herein contained shall pre-
2 vent the placing of a roof garden, art gallery, or rooms
3 for similar purposes above a theatre, provided the floor
4 of the same forming the roof over such theatre shall
5 be constructed of fire-proof materials, and shall have no
6 covering boards or sleepers of wood. Every roof over
7 such garden or other rooms shall have all supports and
8 rafters of steel, and, if covered, shall be covered with
9 glass or fireproof material, or both.

Exits from Roof Gardens.

1 SECTION 109. Exits from roof gardens may com-
2 municate with stairs leading from the auditorium of the
3 theatre, but they shall be at least four in number, not less
4 than four feet six inches wide, and distinct and separate
5 from each other from roof to street.

SUMMER THEATRES.

1 SECTION 110. Summer theatres, if built without
2 the building limits, and located thirty feet distant from
3 any other building or structure or adjoining lot lines, and
4 of no greater seating capacity than seven hundred and
5 fifty persons, and not more than one story high, without
6 balconies, or galleries, may be constructed as follows:

7 The auditorium, without a cellar or basement, with
8 open sides of double the number of exits as hereinbefore
9 provided, opening directly into the surrounding courts
10 or gardens at the grade level, and the adjoining dressing
11 rooms, may be of wooden construction, but the stage
12 shall be enclosed in brick walls not less than twelve
13 inches thick, or shall be plastered on metal lathing
14 throughout: *provided* that the openings leading to the
15 dressing-rooms shall be provided with fire-doors.

16 Otherwise, all protective features and arrangements
17 shall comply with all provisions for theatres.

EXISTING THEATRES.

1 SECTION 111. Alterations of existing theatres and
2 places of public assembly shall be subject to such regula-
3 tions as the Superintendent shall prescribe in each case,
4 not inconsistent with the provisions of this ordinance for
5 new structures.

PLUMBING.

Definition of Terms.

1 SECTION 112. The following terms shall have the
2 meanings respectively assigned to them:

3 "Repair of leaks" shall mean such repairs as are
4 necessary to protect property, but do not involve any
5 extensive change in construction.

6 "Y-branches" shall mean a branch at sufficient angle
7 to direct the flow and prevent backing up.

8 "Air-pipes" or "back air pipes" shall mean air pipes
9 from traps that extend toward the main soil pipe or the
10 outer air and connect with not more than three traps.

11 "Vent pipes" shall mean general lines of back air
12 pipes connecting with more than three fixtures.

13 "Drain" shall mean that part of the drainage system
14 of a building extending through basement or cellar to
15 sewer.

16 "Soil pipe" shall mean that part of the drainage
17 system of a building, of four inches or more internal
18 diameter, between basement or cellar and the highest
19 fixture in the building.

20 "Ventilation pipe" shall mean the extension of the
21 soil pipe from the highest fixture to and through the roof.

22 "Surface drain" shall mean a connection with drain
23 in the basement to allow egress of surface water or over-
24 flow.

25 "Fixture" shall mean any receptacle or outlet placed
26 for the purpose of disposing of waste water or other
27 matter, and connecting with the waste, soil or drain pipe
28 of a building.

Registration.

1 SECTION 113. No plumber shall engage in or work
2 at the business of plumbing unless he shall have first
3 registered his name and place of business in the office of
4 the Superintendent, and no person shall by display of
5 sign or plumbing material, or otherwise, advertise as a
6 plumber unless he shall have been registered or licensed
7 as such. Every master plumber shall conspicuously dis-
8 play his certificate or license within his place of business.
9 Notice of any change in the place of business of a regis-
10 tered or licensed master plumber shall be immediately
11 given to the Superintendent.

Notices.

1 SECTION 114. Every plumber, before doing any
2 work in a building, shall, except in the case of repair of
3 leaks, file at the office of the Superintendent, upon blanks
4 for that purpose, an application for a permit, and if
5 required by the Superintendent a plan or sketch of the
6 work to be performed; and no such work shall be done
7 in any building without a written permit from the
8 Superintendent.

Connection with Sewer or Drain.

1 SECTION 115. The plumbing of every building
2 shall be separately and independently connected outside
3 the building with the public sewer, if such sewer is pro-
4 vided, or with a proper and sufficient private drain or
5 sewer laid outside of the building, and if a sewer is not
6 accessible, with a proper cesspool. Several buildings may
7 have a common sewer connection if such connection is
8 approved by the Superintendent.

Inspection and Tests.

1 SECTION 116. Pipes or other fixtures shall not be
2 covered or concealed from view until approved by the
3 Superintendent, who shall examine or test the same with-
4 in two working days after notice that they are ready for
5 inspection. Plumbing shall not be used unless, when
6 roughed in, the wastes, vents and back-air pipes and
7 traps are first tested by water or sufficient air pressure in
8 the presence of the inspector, when such testing is
9 practicable.

Soil and Waste Pipes and Traps.

1 SECTION 117. The waste pipe of every independ-
2 ent sink, basin, bathtub, water-closet, slop-hopper, urinal
3 or other fixture shall be furnished with a separate trap,
4 which shall be placed as near as practicable to the fixture
5 which it serves. A sink and set of three wash-trays may

6 be connected to the house drain through one five-inch
7 round trap, when the outlet of the sink is not over three
8 feet six inches from the nearest outlet from the wash-
9 trays; and in such case the trap shall be above the floor.
10 The outlet from each fixture shall enter the trap sepa-
11 rately. Not more than four wash-bowls or sinks in a
12 continuous line may be connected to the house drain
13 through one five-inch round trap. Two or more fix-
14 tures on the same level with not more than two feet of
15 waste pipe and connecting into the soil or waste pipe not
16 more than eighteen inches below the top water line of the
17 trap, shall not require other vent than the continuation
18 of the soil or waste pipe full size for its whole length.
19 Lateral branches of soil or waste pipe, if more than
20 twenty feet in length, shall be extended through the roof
21 undiminished in size. All connections on lead waste and
22 back-air pipes and of lead pipes to brass ferrules and
23 soldering nipples shall be full size wiped soldered
24 branch, round or flange joints. Soil and waste pipes
25 shall have proper T-Y or Y branches for all fixture con-
26 nections. No connection to lead bends for water-closets
27 or slop-sinks shall be permitted, except the required back-
28 air pipe where a continuous vent is not practicable.
29 Earthenware traps shall have heavy brass floor plates
30 soldered to the lead bends and bolted to the trap flange,
31 and the joint made gas tight with red or white lead.
32 Rubber washers for floor connections shall not be used.
33 Crown venting shall not be used except where continuous
34 venting is not practicable.

Back-air Pipes, Vents, etc.

35 Traps shall be protected from siphonage or air pres-
36 sure by special iron or brass air pipes of a size not less
37 than the waste pipes they serve; back-air pipes shall not
38 be connected to the trap or branched into the waste pipe,
39 except where a continuous vent is not practicable, but a
40 suitable non-siphon trap may be used without a back-air
41 pipe upon the approval of the Superintendent. Back-air

42 pipes shall enter the waste pipe within eighteen inches
43 from the trap and shall be a continuation of the waste
44 pipe. Lead air pipes may be used only for short con-
45 nections where they are exposed to view. Air pipes for
46 water-closet traps shall be connected to the highest point
47 of bend or trap, and may be of two-inch bore if for
48 not more than three fixtures and less than thirty feet in
49 length; if for more than three fixtures or more than
50 thirty feet in length they shall be of three-inch bore.
51 Air pipes shall be run as direct as practicable, and if one
52 and one-half inches or less in diameter shall not exceed
53 thirty feet in length. Two or more air pipes may be
54 connected together or with a vent pipe; but in every such
55 case the connection shall be above the top of the fixture.
56 The trap for the upper fixture on a line of soil or waste
57 pipe, if within five feet of the stack in a horizontal line,
58 shall not require a special air pipe, unless the outlet is
59 branched into a stack more than eighteen inches below
60 the top water-line of the trap. Diameters of vent pipes
61 shall not be less than two inches for main vents through
62 less than seven stories; three inches for water-closets on
63 more than three floors, and for other fixtures in more
64 than seven stories. All vent pipes shall be increased one
65 inch in diameter before passing through the roof. Vent
66 lines shall be connected at the bottom with a soil or
67 waste pipe or with the drain, in such a manner as to
68 prevent accumulation of rust scale and properly to drip
69 the water of condensation. Offsets shall be made at an
70 angle of not less than forty-five degrees. Soil pipes or
71 iron waste pipes, vents and back-air pipes shall be sup-
72 ported by clamps to the woodwork, iron drive hooks to
73 brick walls, or bolted clamps to iron girders.
74 All traps, except for water-closets, not provided with
75 special air pipes shall be suitable non-siphon traps.
76 Round traps shall be not less than four inches in diam-
77 eter and eight inches long, and made of eight-pound
78 lead. All trap screws shall be water-sealed.

Chemical Laboratories.

79 Fixtures and waste pipes in chemical laboratories
80 shall be installed in accordance with plans approved by
81 the Superintendent.

Stables.

82 The drainage of stable fixtures shall be constructed
83 in accordance with plans approved by the Superintendent.

1 SECTION 118. In buildings where a series of bath-
2 rooms or kitchens are located directly over each other
3 and having a common soil or waste pipe, the back-air
4 pipe required shall be a vent line connecting with each
5 outlet branch close to the water-closet connection or out-
6 let from the sink trap, each branch vent to connect to
7 vent line above the top of the highest fixture on each
8 floor, the vent line to connect to main vent line above
9 the top of the highest fixture in the building.

10 In the case of batteries of water-closets or other fix-
11 tures the special air pipe from each trap may be omitted,
12 provided the soil or waste pipe, undiminished in size, is
13 continued to a point above the roof or revented into the
14 main soil pipe system above the top of the uppermost
15 fixture.

Refrigerator Wastes and Drip Pipes.

1 SECTION 119. All drip or overflow pipes shall be
2 extended to some place in open sight, and in no case shall
3 any such pipe be connected directly with the drain pipe.
4 No waste pipe from a refrigerator or other receptacle in
5 which provisions are stored shall be connected directly
6 with a drain or other waste pipe. The waste pipes from
7 all other fixtures shall be connected directly with a drain
8 pipe. Refrigerator wastes connecting with two or more
9 stories shall be supplied with a trap on the branch for
10 each floor and extended through the roof.

Water-closets, Etc.

SECTION 120. Every water-closet or line of water-closets shall be supplied with water from a tank or cistern, and shall have a flushing pipe of not less than one and one-quarter inches in diameter. Privy vaults shall be of brick and cement of a capacity of not less than fifty cubic feet, of easy access, convenient to open and clean, and water tight. The inside shall be not less than two feet from the next lot and from any public or private way.

SECTION 121. The diameters of soil and waste pipes shall be not less than those given in the following table:

	<i>Inches</i>
Soil pipes	4
Main waste pipes	2
Main waste pipes for kitchen sinks on five or more floors	3
Branch waste pipes for laundry tubs	1½
Branch waste for kitchen sinks	1½
Branch waste for urinals	1½
No branch waste for other fixtures shall be less than	1¼

Except that, with the approval of the Superintendent, a three-inch soil pipe may be used for one water-closet where it is not practicable to use a four-inch pipe.

Ferrules, Clean-outs, Etc.

The screw cap shall have a solid square or hexagonal nut, not less than one-half inch high, with a least diameter of one and one-half inches. The bodies of brass clean-out ferrules shall be at least equal in weight and thickness to the calking ferrule for the same size of pipe.

Lead Pipe.

The use of lead pipes is restricted to short branches of the soil and waste pipes, bends and traps, and roof connections of inside leaders. "Short branches" of lead pipe shall mean not more than:

5 feet of 1¼-inch pipe
 5 feet of 1½-inch pipe
 4 feet of 2-inch pipe
 2 feet of 3-inch pipe
 2 feet of 4-inch pipe

Brass Pipe.

16 Brass pipe for soil, waste, vent and back-air pipes
 17 shall be thoroughly annealed, seamless, drawn brass tub-
 18 ing, of not less than number thirteen Stubbs gauge.

19 No slip joints or unions shall be used on traps, waste,
 20 vents or back-air pipes. Threaded connections on brass
 21 pipe shall be of the same size as pipe threads for the
 22 same size of pipe and shall be tapered. Connections be-
 23 tween lead and iron shall be made by brass sleeves or
 24 screw nipples wiped to the lead and calked or screwed
 25 into the iron.

Cast-iron Pipes, Etc.

26 Cast-iron pipes shall be uncoated, sound, cylindrical
 27 and smooth, free from cracks and other defects, of uni-
 28 form thickness and of the grade known to commerce as
 29 "extra heavy." If buried under ground they shall be
 30 coated with asphaltum or red lead.

31 Pipe, including the hub, shall weigh not less than the
 32 following average weights per linear foot:

Diameters.	Weights per Linear Foot.	Diameters.	Weights per Linear Foot.
2 inches. . . .	5½ pounds.	7 inches. . . . (Not stock size.)	27 pounds.
3 inches. . . .	9½ pounds.	8 inches. . . .	33½ pounds.
4 inches. . . .	13 pounds.	10 inches. . . .	45 pounds.
5 inches. . . .	17 pounds.	12 inches. . . .	54 pounds.
6 inches. . . .	20 pounds.		

33 All joints shall be made with picked oakum and
 34 molten lead run full, and be made gas tight. No cement
 35 joints nor connections between iron and cement or tile
 36 pipe or brick drains shall be made within any building.

Wrought-iron Pipe.

37 Fittings on wrought-iron vent or back-air pipes shall
38 be galvanized, recessed, cast-iron threaded fittings. Fit-
39 tings for "Plumber's tubing" shall be heavy weight, with
40 sharp threads.

Drain Pipes, Etc.

1 SECTION 122. Drain and connecting ventilation
2 pipes, vents and back-air pipes shall be of sufficient size,
3 and made of extra heavy cast-iron pipe if under ground,
4 and if above ground shall be made of extra heavy cast-
5 iron, galvanized wrought-iron of standard weight, or of
6 not less than No. 13 Stubbs gauge brass pipe within the
7 building, except that lead pipes may be used for short
8 connections exposed to view.

9 Cast-iron drains shall extend not less than ten feet
10 from the inside face of the wall, beyond and away from
11 the building.

12 Drain pipes above ground shall be secured by irons
13 to walls, suspended from floor timbers by strong iron
14 hangers, or supported on brick piers. Proper manholes
15 shall be supplied to reach clean-outs and traps. Every
16 drain pipe shall have a fall of not less than one-quarter
17 inch per foot, and shall be extended from a point ten feet
18 outside the inside face of the wall, unobstructed, to and
19 through the roof, undiminished in size, and to a height
20 not less than two feet above the roof and not less than
21 one foot above the top of any window within fifteen feet,
22 and not less than eight feet above the roof if the roof is
23 used for drying clothes or as a roof garden. Every drain
24 pipe shall be provided with a running trap of a size not
25 less than the internal diameter of the drain with heavy
26 brass clean-out.

27 Changes in direction shall be made with curved pipes,
28 and all connections with horizontal or vertical pipes shall
29 be made with Y-branches. Saddle hubs shall not be used.
30 All drain pipes shall be exposed to sight within the build-
31 ing, if such exposure is practicable, and shall not be ex-
32 posed to pressure where they pass through the wall.

Steam Exhausts, Etc.

33 No steam, or vapor, or water of a temperature over
34 one hundred and thirty degrees Fahrenheit shall be dis-
35 charged from any premises into any sewer, drain or
36 catch-basin, nor shall any matter or thing be discharged
37 into any sewer which may tend to cause an obstruction
38 of the public sewer or a nuisance or a deposit therein or
39 any injury thereto.

40 All high pressure steam boilers shall be connected
41 with a blow-off tank of a capacity not less than thirty
42 per cent of the largest boiler connected with such tank.
43 The location of and the connections to said blow-off tank
44 shall be subject to the approval of the Superintendent.

45 No steam exhaust or steam drip, unless it be pro-
46 vided with a cooling tank of a capacity approved by the
47 Superintendent, or unless it be connected with the blow-
48 off tank, shall connect with any drain leading to the
49 sewer. Every blow-off tank shall be supplied with a
50 vapor pipe not less than two inches in diameter, which
51 shall be carried above the roof and above the highest
52 windows of the building.

53 The Superintendent may require such additional
54 means for cooling the blow-off tanks by the injection of
55 cold water or otherwise as may be necessary to reduce the
56 temperature of the water passing from the blow-off tank
57 so that it shall not exceed one hundred and thirty degrees
58 Fahrenheit.

Special Traps, Etc.

1 SECTION 123. Every building from which, in the
2 opinion of the Superintendent, grease may be discharged
3 in such quantity as to clog or injure the sewer, shall have
4 a special grease trap, satisfactory to the Superintendent.
5 Every building in which gasoline, naphtha or other in-
6 flammable compounds are used for business purposes
7 shall be provided with a special trap, satisfactory to the
8 Superintendent, so designed as to prevent the passage of
9 such material into the sewer, and ventilated with a sepa-

10 rate pipe rising to a point four feet above the roof. The
11 waste pipe of every wash stand for vehicles shall be pro-
12 vided with a sand box of sufficient capacity.

13 The waste pipe from the sink of every hotel, eating
14 house, restaurant or other public cooking establishment,
15 shall be connected to a grease trap of sufficient size,
16 easily accessible to open and clean, placed as near as prac-
17 ticable to the fixture that it serves.

Roof Leaders and Surface Drains.

1 SECTION 124. Rain water leaders when connected
2 with house drains shall be suitably trapped and, within
3 the proposed surface drainage area, shall not be con-
4 nected at top of sewage stack, nor extended down
5 through the interior of the building, except by special
6 permit from the Superintendent. Wherever a surface
7 drain is installed in a cellar or basement, it shall be pro-
8 vided with a deep seal trap and back water valve. Drain
9 pipes from fixtures in cellars and basements liable to back
10 flow from a sewer shall be supplied with back water
11 valves.

HAZARDOUS BUILDINGS AND APPLIANCES FOR POWER AND HEAT.

1 SECTION 125. No building shall be used for a
2 grain elevator, or for the storage or manufacture of
3 high combustibles or explosives, or for chemical or ren-
4 dering works, without a permit from the Superintendent,
5 and no engine, dynamo or boiler carrying a pressure of
6 over fifteen pounds per inch shall be placed in any build-
7 ing without a permit from the Superintendent. Every
8 application for such permit shall be in writing, shall be
9 filed with the Superintendent, and shall set forth the
10 character of the building, the size, power and purposes
11 of the apparatus, and such other information as the
12 Superintendent may require. The applicant shall pub-
13 lish in at least two daily newspapers published in the
14 city of Cambridge, and, if so directed by the Superin-

15 tendent, shall also post conspicuously on the premises a
16 copy of the application, and shall deliver copies thereof
17 to such persons as the Superintendent may designate.

18 If no objection is filed with the Superintendent before
19 the expiration of ten days after the time of the first
20 publication of notice, or within ten days of the delivery
21 and first posting of the notice, if such delivery or posting
22 is required, the Superintendent shall, if the arrangement,
23 location, and construction of the proposed apparatus is
24 proper, and in accordance with the provisions of this act,
25 issue a permit for the same. If objection is filed, the
26 application shall be referred to the Board of Appeal,
27 which may, in its discretion, require the deposit by the
28 objector of a reasonable sum as security for the payment
29 of the costs.

30 After such notice as the board shall order it shall
31 hear the same, and shall direct the Superintendent to
32 issue a permit, under such conditions as it may prescribe,
33 or to withhold the same. If the permit is refused, the
34 applicant, and if it is granted, the objectors, shall pay
35 such costs as the board may order.

36 The Superintendent shall, from time to time, after
37 public notice and hearing, prescribe conditions on which
38 any or all boilers carrying a pressure of over fifteen
39 pounds per inch may be maintained in buildings, and,
40 if any person interested objects to such conditions and
41 appeals from his decision establishing the same, the
42 appeal shall be referred to the Board of Appeal, and
43 thereupon said board shall prescribe the conditions.

COMBUSTIBLE MATERIALS.

1 SECTION 126. No building adapted for habitation,
2 nor any part thereof, nor the lot upon which it is situated,
3 shall be used as a place for storage, keeping or hand-
4 ling of any combustible article, nor as a place for the
5 storage, keeping or handling of any article dangerous or
6 detrimental to life or health, nor for the storage, keep-
7 ing or handling of feed, hay, straw, excelsior, cotton,

8 paper stock, feathers or rags, except under such condi-
9 tions as may be prescribed by the chief of the Fire De-
10 partment.

ENFORCEMENT OF ACT.

1 SECTION 127. Every structure and part thereof
2 and appurtenant thereto shall be maintained in such re-
3 pair as not to be dangerous. The owner shall be re-
4 sponsible for the maintenance of all buildings and struc-
5 tures. The lessee under a recorded lease shall be deemed
6 the owner under the provisions of this act.

Enforcement — Jurisdiction in Equity.

1 SECTION 128. Any court having jurisdiction in
2 equity or any justice thereof shall, upon the application
3 of the city by its attorney, have jurisdiction in equity:

4 To restrain the construction, alteration, repair, main-
5 tenance, use or occupation of a building, structure or
6 other thing constructed or used in violation of the pro-
7 visions of this act, and to order its removal or abatement
8 as a nuisance;

9 To restrain the further construction, alteration, re-
10 pair, maintenance, use or occupation of a building, struc-
11 ture or other thing, which is unsafe or dangerous;

12 To restrain the unlawful construction, alteration, re-
13 pair, maintenance, use or occupation of any building,
14 structure or other thing;

15 To compel compliance with the provisions of this
16 act;

17 To order the removal by the owner of a building,
18 structure or other thing unlawfully existing, and to
19 authorize the Superintendent, with the written approval
20 of the mayor in default of such removal by the owner,
21 to remove it at the owner's expense.

Review of Appeal.

1 SECTION 129. Any person, the value of whose
2 property may be affected by any decision of the Board

3 of Appeal, may have the action of said board reviewed
4 by the court by any appropriate process, provided that
5 proceedings are instituted within thirty days after the
6 date of such decision.

7 The person applying for the review shall file a bond
8 with sufficient surety, to be approved by the court, for
9 such sum as shall be fixed by the court, to indemnify
10 and save harmless the person or persons in whose favor
11 the decision was rendered from all damages and costs
12 which they may sustain in case the decision of said board
13 is affirmed.

14 In case the decision of the board is affirmed the
15 court, on motion, shall assess damages, and execution
16 shall issue therefor.

17 Any person having any duty to perform under the
18 provisions of this act may, so far as may be necessary
19 for the performance of his duties, enter any building
20 or premises in the city of Cambridge.

Jurisdiction at Law.

1 SECTION 130. The municipal court of the city of
2 Cambridge shall have jurisdiction throughout the city
3 of prosecutions and proceedings at law under the pro-
4 visions of this act concurrent with the superior court,
5 and also of all provisions of law relating to plumbing.

Nuisance.

1 SECTION 131. A building or structure which is
2 erected or maintained in violation of the provisions of
3 this act shall be deemed a common nuisance without
4 other proof thereof than proof of its unlawful construc-
5 tion, and the Superintendent may abate and remove it
6 in the same manner as boards of health may remove
7 nuisances under the provisions of Sections 67, 68 and
8 69 of Chapter 75, Revised Laws.

9 Whoever violates any provisions of this act, or who-
10 ever builds, alters or maintains any structure or any part
11 thereof in violation of the provisions of this act shall
12 be punished by a fine not exceeding five hundred dollars.

This book should be returned to
the Library on or before the last date
stamped below.

A fine of five cents a day is incurred
by retaining it beyond the specified
time.

Please return promptly.

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